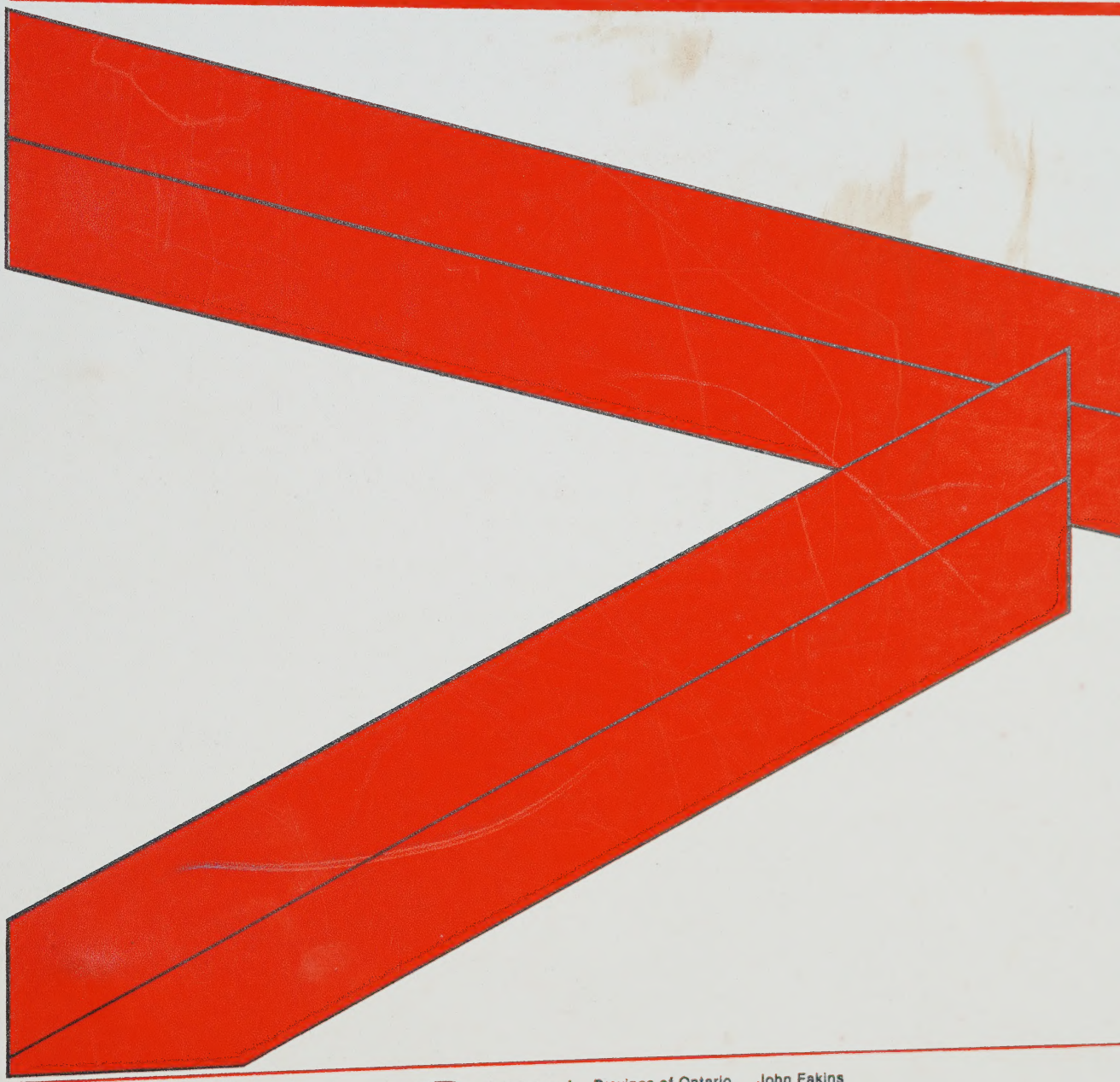
Sports and Fitness

The BASICS

Fitness Ontario Leadership Program



Ontario
Ministry of Tourism and Recreation
Province of Ontario
Queen's Park
Toronto, Canada
M7A 2R9
John Eakins
Minister
Jim Keenan
Deputy Minister

Preface

Welcome to the Fitness Ontario Leadership Program!

Becoming a fitness leader involves a significant transition from an initial interest in fitness leadership to actually enrolling in courses and then to spending some time applying what you have learned – putting the theory into practice.

The purpose of this manual is to facilitate this transition by providing the basic information and learning experiences necessary to becoming an effective leader. As such, the manual is designed to be used in conjunction with a Fitness Ontario Leadership Program BASICS course, or to stand on its own as a workbook/resource.

However you decide to use it, the intent is to provide materials that will assist you in creating group classes that are meaningful and enjoyable for participants.

Dorothy Strachan
Author

Acknowledgments

A number of enthusiastic, well-informed and highly committed individuals have contributed a great deal to the development of this manual:

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. . . . and also,

* The participants in the Pilot Workshop who tested the manual and
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Becoming a Fitness Leader

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I. A Focus on Leadership

1. What is Fitness Leadership? It's your first real fitness class. Thirty-five people are standing around in exercise gear.

From what you can see, they are all shapes and sizes – tall ones, short ones, thin ones, heavy ones, people who are well muscled and others who are flabby; and at first glance it looks as if the group is about 75% female.

What you can't see is that there are two engineers, one writer with thick glasses, a professor currently on sabbatical, three high school teachers who like exams, two janitors, one ex-professional football player gone to seed, a novice sailor with wobbly legs, two dancers with large bunions on their feet, three early childhood education specialists, two waitresses with sore knees, three homemakers, one aspiring fitness leader, five students, one clerk with one leg, three middle-aged female administrators with osteoporosis, one older male who has Parkinson's disease, a part-time counsellor who has rheumatoid arthritis and is in the second month of her eighth pregnancy, and two punk rockers with bad breath. One third of the class are smokers, two thirds eat on the run and one quarter have too much distress in their lives.

Your challenge is to be their fitness leader over the next twelve weeks.

Becoming a fitness leader often means becoming a participant first – attending classes, critiquing instructors, wondering what you would do in comparison to what you see other leaders doing.

Let's assume that you are in the market for a top flight fitness class with the best leader you can find. What characteristics would this leader have? Write your ideas in the left-hand column on the chart that follows:

Characteristics:	1 2 3 4 5 low high	Comments:
_____	1 2 3 4 5	_____
_____	1 2 3 4 5	_____
_____	1 2 3 4 5	_____
_____	1 2 3 4 5	_____
_____	1 2 3 4 5	_____
_____	1 2 3 4 5	_____

Now take a few minutes to think about where you are now as a fitness leader. Circle the number that best describes where you see yourself in terms of your ideal leader's characteristics. Jot down any comments that come to mind in the right hand column.

Keeping this exercise in mind, what are your top three learning priorities now that you are starting this BASICS course?

1. _____
2. _____
3. _____

Think about the other "perfect" participants in this ideal class. What characteristics would they have?

Characteristics:	1 2 3 4 5 (low … high)	Comments:
_____	1 2 3 4 5	_____
_____	1 2 3 4 5	_____
_____	1 2 3 4 5	_____
_____	1 2 3 4 5	_____
_____	1 2 3 4 5	_____
_____	1 2 3 4 5	_____

Think about yourself as a participant in a fitness class. How would you measure up to the "ideal participants" you described in the previous list? Circle the number that best describes where you see yourself in terms of these characteristics. Jot down any comments that come to mind.

Keeping the previous exercise in mind, what are your top three goals for how you will participate in this BASICS course?

1. _____
2. _____
3. _____

Each of us is both a participant and a leader, depending on where we are in terms of our development within a specific field of knowledge. While you may very well be a leader with a group like the one described earlier, you are also a participant in this BASICS course. The process of knowing how you are as a participant is important to acquiring skills as a leader. These two processes weave closely, one with the other.

The next section asks you to think about the responsibilities and benefits in fitness leadership.

2. Responsibilities and Benefits Doing a good job involves understanding the responsibilities and benefits inherent in the work you are doing. Use the space below to list all of the responsibilities and benefits that you can think of related to the work of fitness leadership. One example is listed at the top of each column to get you started.

Responsibilities	Benefits
• Be on time for class	• Working out with people who share my fitness values

Which column was easiest to fill out?

_____

Why?

_____

_____

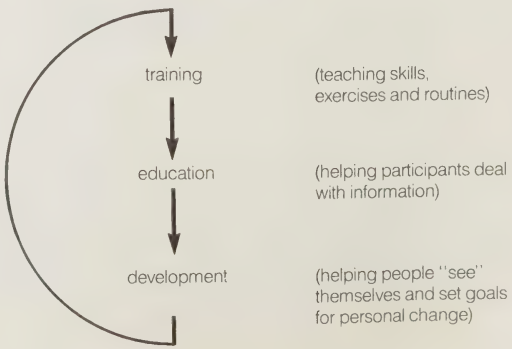
What you put into and get out of fitness classes depends on what you value as a leader. The next section challenges you to think about these values.

3. Values Into Action From one point of view, fitness leadership involves two main developmental processes – one that is primarily philosophical and takes place within the leader, and another that is primarily action-oriented and interpersonal and happens as the main part of group classes.

The first process involves understanding what your own values are and how they will impact on how you plan programs, design classes and guide your own professional development.

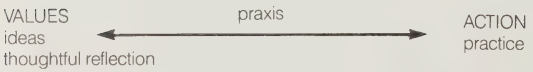
This takes considerable time as you reflect on what you think is important in a good fitness class and why you value it. The previous exercises (dealing with the ideal class and the perfect participants and with responsibilities and benefits) are part of values clarification; they encourage you to think about what you value in other leaders and participants and then to set your own goals for professional development.

The second process describes the major activities a leader engages in as part of leading a class. Here the focus is interpersonal and action-oriented, with the leader training participants how to do certain things such as situps or simple routines. In addition, the leader also provides opportunities where participants can learn some basic factual information that may enable them to make significant lifestyle changes such as better eating habits or improved skills in stress management. And lastly, the hope is that class members will be able to develop personally in the ways that they want to within your classes.

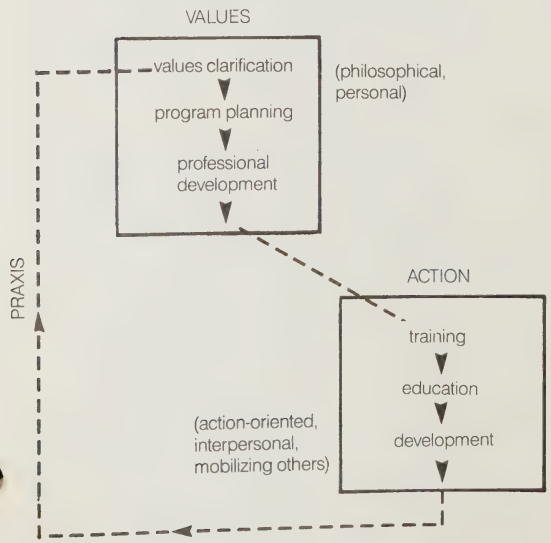


Both of these processes work together simultaneously to create the "whole" that is fitness leadership. The effective leader needs the skills to be reflective about values and how they fit with program planning and professional development at the same time as he or she is focusing on delivering a program that includes skill development, educational information and opportunities for personal development. Thus while the leader is in essence growing and developing personally and professionally, so are the class members, and as such, leaders and participants work together to improve the entire field of fitness leadership – one constantly challenging the other.

Aristotle's concept of Praxis provides a major link between these two processes. "Praxis" refers to the melding of ideas and practice; it demands thoughtful reflection about values as well as ethical ways to act and thus can be considered as the link between values and practice.



At the core of quality fitness leadership is this concept of "praxis" – leaders thoughtfully translating their values into action.



The next two sections describe this concept. "Overheard" is a conversation about the link between ideas and implementation while the section on holism describes the value of holism and suggests ways for leaders to integrate a holistic approach to fitness in their classes.

4. Overheard At a recent FOLP "trainer"[1] workshop, a group of 7 participants were sitting around at the end of a day sharing memories about when they first led fitness classes. This evolved into a discussion about what it is that keeps them involved as fitness leaders and encourages them to stay involved in training other leaders.

Jesse: "One thing for sure – it's definitely not the money. I've heard about people making a good living teaching classes but whenever I sit down and talk to them about what it actually takes in time and effort to plan good classes, make tapes or organize records and then spend the energy teaching, it doesn't work out to much money on a per-hour basis. In some of the places I teach, I'm afraid to figure out how much I actually make. Especially if it's a dance class – the time it takes to do choreography alone brings the hourly wage down to about $4.00 per hour."

Angela: "That's true for me too – it's not just the money. I originally started teaching classes because I wanted to try something different and because I love the feeling of being fit but I don't have too much will power. When I'm teaching classes, I don't dare miss a class no matter how I feel, so the payoff is double; I do make a little money and at the same time I end up feeling good."

Phil: "I'm like that too – for some reason I feel guilty about saying that I teach classes to stay in shape, but it's true – it's a big part of why I do it. And it's a nice feeling to know that I am also contributing something good to all those other people out there – I like that feeling."

Regine: "For me it was really just a job at first; I wanted to work full time and there were no other positions available for phys. ed. grads like me so I started teaching classes part-time and it worked into a full-time job. Now I teach about twelve hours a week and the rest of the time I do basic

administration. I find I can get really burned out from teaching too many classes and then my interest flags and I wonder what the hell I'm doing. But most of the time it's a real privilege to be working in such a positive field – on some days I feel as if I can't do anything wrong – it's as if people think that because I'm a leader I don't worry about things, I don't have any problems and I'm always in good shape. What a laugh!"

Angela: "I have really become very close to some of my classes – and I've noticed over the years that it's the ones whom I have spent the effort to get to know that have had the biggest payoffs for me. For the classes that I just went in and delivered I found that I got out of them just what I put into them – just a class. But where I took the time to give them interesting quotations or teach them something about nutrition, well it was as if I had an investment with them and I got a lot back. And sometimes feedback that I didn't want! But that also made me a better teacher. It's that kind of learning that's been a big high for me."

Jesse: "Yes – after ten years of teaching classes, I'm on the lookout more now for ways to get that high too. I actually make a real effort now to get people to be candid about what they like and what they want changed – and then I ask myself seriously whether their ideas are good ones and whether they will work and if the rest of the class feels the same way. I don't take it as personally now as I used to – I guess I feel comfortable that I'm basically a good leader and now I need to work on other more refined parts of what I do. And when I think back to how I used to be I'm embarrassed. I remember the very first year I taught – when I look back now I realize how awful I was – people were so patient with me while I learned. I must have done the same leg lift exercise for a whole year and hardly anyone ever murmured. I find it hard to admit it even now. And I used to think I was open just by saying to people at the end of class – "Please let me know how the classes are going for you – I want to be sure that you're getting the kind of workout you need." Good grief. Have any of you ever felt that way?"

Phil: "Are you kidding? At my first class, I finished what was supposed to be an hour class in twenty-five minutes and then was so embarrassed, I told them that I did it on purpose because they needed to take it easy during the first week. For some reason, I had miscalculated how much time and music I needed or I went too fast or something so I ended up standing there with my mouth open in a panic and nothing to say. And I certainly didn't realize I could just say it was my first class – I really wanted to look good."

Mickey: "I bet we all have a horror story about when we first started to teach. I remember learning the hard way that overweight people can't do tricky things with their feet because their weight throws them off balance – one really heavy woman broke her ankle and suggested that we slow down our foot work. I thought I was going to die of panic. I didn't and she didn't either and I learned about reading bodies as a way to design my classes. And I never forgot what her ankle sounded like when it snapped. Yech!"

Patti: "I remember coming back to teach about 3 months after my first pregnancy and doing a stride jump routine and wetting my pants and recalling watching other women jump on one foot during stride jumps for the same reason. I can't believe how insensitive I had been to women in the same situation with weakened bladder muscles – I had to feel it myself before I changed that activity."

Tom: "I'll never forget telling one class why they shouldn't do straight leg situps. And then demonstrating why straight-leg situps can be dangerous and pulling a back muscle in front of the whole class while doing it."

Mickey: "But what I really wanted to say was that although that awful thing happened and she broke her ankle – most of the things that I learned and am still learning about teaching classes is how much faster I can grow if I take a few risks. I know that might sound corny but teaching fitness classes is the biggest challenge I have in my life these days. People expect me to be a sort of teacher, nutritionist, physiotherapist, psychiatrist, nurse, counsellor, etc. and it's interesting how good I have become at helping them realize that I'm none of

those things – that I'm just another person just like them but that I have a special interest and understanding about fitness and because fitness involves so many other fields, it may seem as if I know a lot more than I really do. And that I can refer them to the experts but basically, I'm a fitness leader who knows most about exercise and working out."

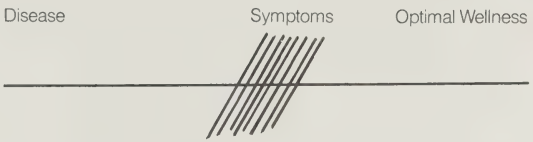
Patti: "I find that's really true – that it's important to know who you are and what you know and not to let them think you know more than you do. And about how this work has influenced how you've grown – the biggest thing for me has been that I have a lot more confidence now; I'm not afraid of what I don't know; I figure I'll just find out somewhere or else I'll get someone in who does know. I want the people in my classes to see me as a person with my own legitimate weaknesses and strengths – not as a model of how they should look or feel. And that might not sound like much now that I say it, but that's been a big learning for me. And it seems I have to re-learn it again and again . . ."

II. A Focus on Holism

1. What is Holism? One of the primary values of the FOLP BASICS program is holism. Translating that value into action first requires a clear understanding of what holism means.

Good health in its broadest context emphasizes the total person's being – body, mind and spirit – doing, thinking, feeling.

If we look at good health as a continuum, with optimal wellness at one end and disease at the other, then a holistic approach concerns itself with encouraging people to maintain their health at the "wellness" end of the continuum i.e. a preventive approach.

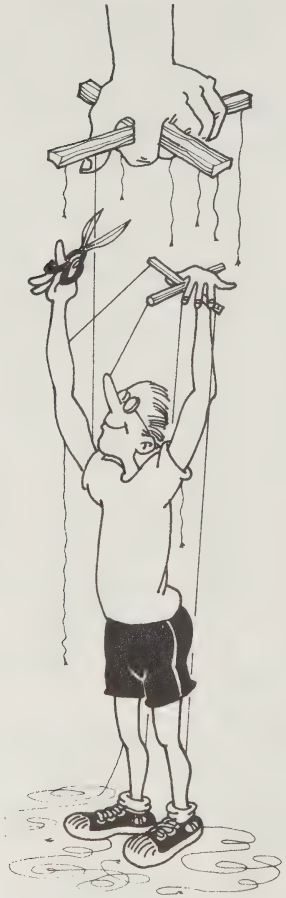


Traditional medicine has typically concerned itself with the "dis-ease" part of this continuum and has emphasized crisis intervention and/or therapy as methods of dealing with illness.

This approach, although successful in many areas, does not adequately answer the need for solutions to "society-induced" or "self-imposed" illnesses such as cardiac problems, sinus difficulties, headaches, arthritis, hypertension, AIDS, alcoholism, etc. Perhaps Dr. D.C. Jarvis recognized this problem with our health system in 1957 when he wrote: "the doctor of the future will be a teacher as well as a physician, whose real job will be assisting people to learn how to be healthy."

Wellness is not simply the absence of disease. Many people do not have any noticeable symptoms of disease and yet are chronically tired, depressed, tense and bored with their lives. Wellness is an active, positive state of good health in which a person has an extended commitment to well-being. Fitness leaders who value a holistic approach to teaching their classes will ensure that this value is translated into action by the ways in which they teach exercises and/or routines, by how they try to educate participants about healthy eating habits, by the approaches they use to ensure that the classes they design become a helpful part of each participant's stress management program.

A holistic approach to fitness leadership also involves working with individual participants and groups to recognize how a self-responsible attitude towards personal health will improve their overall wellness – the physical fitness, stress management and nutritional components of their lives.



Imagine that you are participating in the ultimate fitness class for you.

1. How is the leader meeting your needs for a physical workout?

2. How is the leader helping you to feel comfortable as a member of this group?

3. How is the leader providing you with food for thought related to your overall lifestyle?

4. How is the leader helping your spirit to feel uplifted and refreshed?

5. How is the leader challenging you to think about your nutritional habits and encouraging you to look for healthier eating patterns?

6. How is the leader encouraging you to reflect on your stress management habits and set some goals for this area?

7. How does the leader help you feel that your health is your responsibility and that if you want to make changes you will need to start with yourself?

8. How does the leader help you feel that he or she is involved with you as a whole person, not just as a body that needs some exercise?

Your answers to these questions are the "practice" part of how to translate the value of holism into action in a fitness class. What other practical suggestions do you have for how fitness leaders might bring the "praxis" of holism (i.e. theory into practice) into their classes? Add your further suggestions here:

2. Lifestyle Risk Factors The physical part of fitness provides a delightful pathway to holism. Along this pathway, leaders can encourage participants to develop a holistic attitude towards their own health while they are in the process of improving their levels of physical fitness.

Sadly enough, as in the case of Grabwell Grommet, this often doesn't occur!

a. The Murder of Grabwell Grommet[2] by Arthur Hoppe

On the morning of his 42nd birthday, Grabwell Grommet awoke to a peal of particularly ominous thunder. Glancing out the window with bleary eyes, he saw written in fiery letters across the sky:

"Someone is trying to kill you, Grabwell Grommet!"

With shaking hands, Grommet lit his first cigarette of the day. He didn't question the message. You don't question messages like that. His only question was, "Who?"

At breakfast as he salted his fried eggs, he told his wife, Gratia, "Someone's trying to kill me."

"Who?" she asked in horror.

Grommet slowly stirred the cream and sugar into his coffee and shook his head. "I don't know," he said.

Convinced though he was, Grommet couldn't go to the police with such a story. He decided his only course was to go about his daily routine and hope somehow to outwit his would-be murderer. He

tried to think on the drive to the office. But the frustrations of making time by beating lights and switching lanes occupied him wholly. Nor, once behind his desk, could he find a moment, what with jangling phones, urgent memos and the problems and decisions piling up as they did each day. It wasn't until his second martini at lunch that the full terror of his position struck him. It was all he could do to finish his lasagna Milanese. "I can't panic" he said to himself, lighting his cigar, "I simply must live my life as usual."

So he worked till seven as usual. Drove home as fast as usual. Ate a hearty dinner as usual. Had his two cocktails as usual. Studied business reports as usual. And took his usual two Seconal capsules in order to get his usual six hours sleep.

As the days passed, he manfully stuck to his routine. And as the months went by he began to take a perverse pleasure in his ability to survive. "Whoever's trying to get me," he'd say to his wife, "hasn't got me yet. I'm too smart for him."

"Oh, please be careful," she'd reply, ladling him a second helping of her beef Stroganoff.

The pride grew as he managed to go on living for years. But, as it must to all men, death came at last to Grabwell Grommet. It came at his desk on a particularly busy day. He was 53.

His grief-stricken widow demanded a full autopsy. But it showed only emphysema, arteriosclerosis, duodenal ulcers, cirrhosis of the liver, cardiac necrosis, a cerebrovascular aneurism, pulmonary edema, obesity, circulatory insufficiency and a touch of lung cancer.

"How glad Grabwell would have been to know," said the widow smiling proudly through her tears, "that he died of natural causes."

b. To Think About

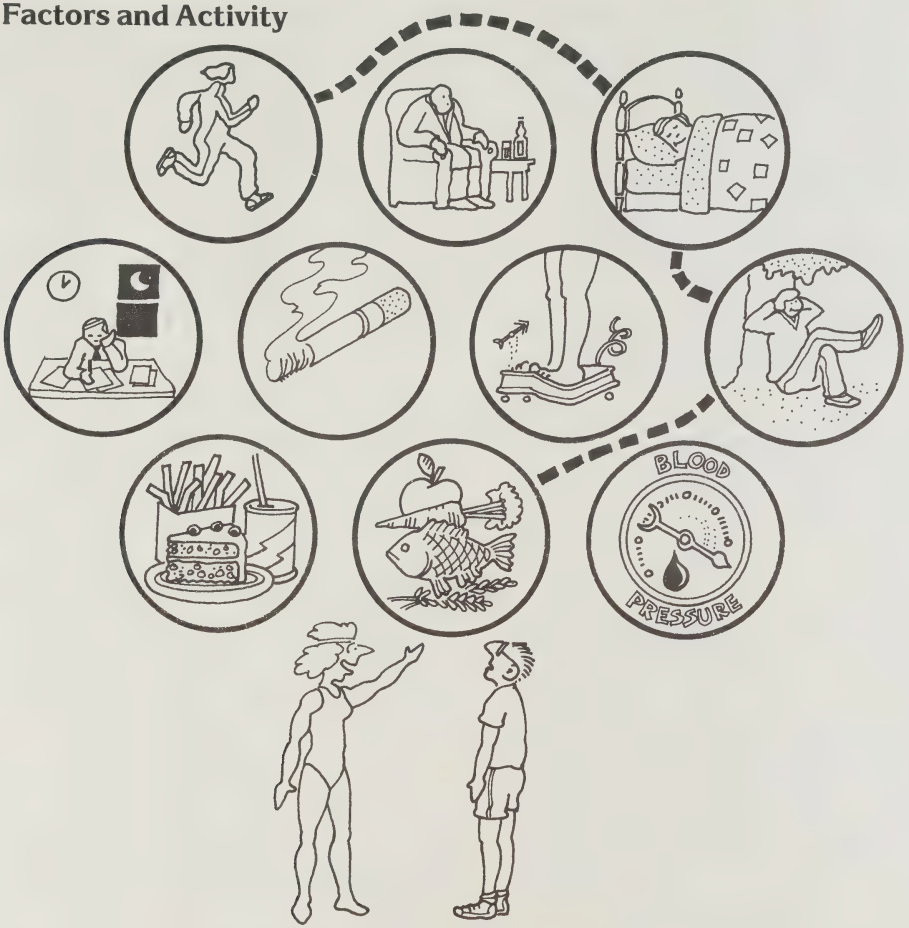
1. Describe the evidence that you would present as the coroner at Grabwell Grommet's inquest. What specifically caused his death?

2. Assume that Grabwell showed up as a participant in your fitness class. What would you do?

3. Imagine that you are writing the Grabwell Grommet case study, with Grabwell as a female. What changes (if any) would you make to adjust the story to a woman's situation?

Grabwell obviously had a problem with his risk factors! As his story illustrates, the relationship between physical activity and lifestyle risk factors is a complex one. Each of the factors in the following illustration may be a positive contributor to a healthy lifestyle or a negative detractor. For example, your eating patterns can do much to improve your overall health, or they can seriously impair your level of functioning. As fitness leaders who value a holistic approach, one of your responsibilities is to make your participants aware of these factors and what they can do about them.

Risk Factors and Activity



It is also important to keep in mind that each person will have a unique set of lifestyle risk factors depending on genetic potential, environmental influences, medical history, and a host of other factors. It would be presumptuous to think that you could advise any given participant on how to live the "perfect" lifestyle! Your responsibility as a leader is to make reliable information available and then facilitate your class members in their own decision-making process about how they want to live their lives. This is where the issue of self-responsibility comes in – "you can lead a participant to water but . . ."

c. *Quotations*

The following quotations may be useful in the educational component of your classes. Each quotation relates to a specific lifestyle factor.

i. Weight

Physical inactivity is associated with obesity and with coronary heart disease. Obese adults are less active than their normal-weight counterparts, but this same relationship may not occur with children. This suggests that inactivity is a consequence rather than a cause of obesity, and that it plays a more important role in the maintenance of excess weight than in its development.

Physical activity is an important component of a weight reduction program. More body fat and less lean tissue are lost when diet and exercise are combined than when diet alone is used. Physical activity can facilitate weight loss directly through energy expenditure, but changes in body weight cannot be explained solely by the increase in caloric expenditure due to exercise. Exercise may promote weight loss through a decrease in appetite. In

addition, the increase in basal metabolism produced by exercise may help to counteract the decrease in metabolism and the increase in energy efficiency that occur with weight loss.[3]

ii. Serum Cholesterol
Fats: There's More Than One Kind

a. Saturated fatty acid – found in animal sources of food – i.e. meat, dairy products, egg yolk.
b. Monounsaturated fatty acid – food sources include nuts, olives, and avocados.
c. Polyunsaturated fatty acid – found primarily in vegetable oils, i.e. safflower, sunflower, corn, soybean.

Liquid fats can be hydrogenated to make them harder. For example, vegetable oil can be hydrogenated into soft margarine or hard margarine. Hydrogenation makes the fat more saturated.

Two Key Fats:

a. Linoleic acid is an essential polyunsaturated fatty acid the body can't manufacture, therefore you must get it in the food you eat. Vegetable oils are the best source.
b. Cholesterol is produced in the liver, and delivered by the bloodstream to the cells of the body where it performs a number of useful functions.
The liver also uses cholesterol to make bile acid needed in digesting fats. Even if you don't eat any food containing cholesterol, your body will manufacture it.

Cholesterol is found in animal foods but not in vegetable foods.

Fat and Your Health: Heart Disease

Atherosclerosis (commonly called hardening of the arteries) is the buildup of plaque inside the artery walls. The plaque is primarily made up of cell debris and cholesterol. When this buildup is so great that blood can't flow through the artery, and when the artery is the one leading to the heart, a heart attack takes place. A blockage in an artery leading to the brain results in a stroke.

The amount of cholesterol circulating in the blood is affected by the amount and kind of fat eaten.

- Saturated fatty acids increase cholesterol
- Polyunsaturates reduce it
- Monounsaturates seem to have no effect

The Lipoprotein Factor

In the blood, cholesterol is carried in a lipoprotein molecule. There are different kinds of lipoproteins:
- High density lipoproteins (HDL's) – the good guys, who seem to protect against atherosclerosis by preventing cholesterol from adhering to the artery walls and instead returning it to the liver. They also seem to help the liver excrete unnecessary cholesterol.
- Low density lipoproteins (LDL's) – the not-so-good guys, who keep cholesterol circulating in the blood and deliver it to the cells. They do not help clear the arteries.

Lifestyle, Lipoproteins and You

You can affect the ratio of HDL's and LDL's in your body.
- When you eat a lot of saturated fat, the liver produces LDL's. Polyunsaturated fats encourage cholesterol transport by HDL's and decrease the proportion carried by LDL's.
- Obese people have low levels of HDL's but if they lose weight, the percentage of HDL's increases.
- Regular strenuous exercise increases HDL's.
- Before menopause, women have higher HDL levels than men, which may explain women's lower rate of heart disease under age 55.
- Check your level of cholesterol yearly.

iii. Coronary Heart Disease (CHD)

New types of drugs do not cure coronary artery disease or prevent it from progressing, but they make it easier to control. And combining drugs with life-style changes can often significantly improve the quality of life for patients with angina. For example, smokers who quit are likely to get relief from chest pain (and to live longer). A careful program of physical activity can improve the individual's exercise tolerance and stave off attacks. Dietary changes may also be helpful.[4]

iv. Cancer and Smoking

One study compared about 500 cancer patients with a like number of controls (people of the same age, sex and race, but without cancer). Detailed information was obtained from questionnaires on lifetime exposure to the cigarette smoke of parents, spouses, or others in the same household. The results of this investigation, which the authors cautiously designate as "preliminary" were remarkably strong and consistent: the more smokers one has lived with, the higher one's risk of

cancer. However, the cancers in question were not just those usually associated with cigarette smoking but also included cancer of the breast and cervix as well as leukemia and lymphoma.

. . .Another study followed more than a thousand infants through their first year of life. It revealed that the babies of smoking mothers develop infection of the major airways (bronchitis and tracheitis) much more frequently than children of nonsmokers. The fathers' smoke appeared to play a smaller role, probably because babies generally spend much less time with fathers than mothers.

. . .People who smoke cigarettes are often killed by their addiction. For the rest of us, the verdict on second-hand (or "involuntary") smoking is becoming increasingly apparent. Adults would do well to minimize their exposure to the smoke of others. And smoking adults should realize that when they light up in the presence of infants they are engaging in a not-so-mild form of child abuse.[5]

v. Stress Management

If I Could Live it Over
by Nadine Stair, 85 years old

If I had to live my life over again, I'd dare to make more mistakes next time.
I'd relax.
I would limber up.
I would be sillier than I have been this trip.
I would take fewer things seriously.
I would take more chances.
I would take more trips. I would climb more mountains, swim more rivers.
I would eat more ice cream and less beans.
I would perhaps have more actual troubles, but I'd have fewer imaginary ones.
You see, I'm one of those people who live seriously and sanely, hour after hour, day after day.
Oh, I've had my moments. And if I had it to do over again, I'd have more of them.
In fact, I'd try to have nothing else, just moments, one after another, instead of living so many years ahead of each day.
I've been one of those persons who never goes anywhere without a thermometer, a hot water bottle, a raincoat and a parachute.
If I had it to do again, I would travel lighter than I have.
If I had to live my life over, I would start barefoot earlier in the spring and stay that way later in the fall.
I would go to more dances.
I would ride more merry-go-rounds.
I would pick more daisies.[6]

vi. Sleep, Relaxation

"I have a technique which seems to work for me, and I do it every morning on rising, most evenings before retiring, and at any time during the day when I feel tense or uncomfortably "hyped". I have no idea whether it would work for anyone else, but I will mention it in case you might be interested. I simply sit comfortably in a chair, close my eyes, and (slowly) inhale and exhale as deeply and fully as I can. I try to feel myself relaxing starting with my toes and feet and proceeding to my ears and head. All this takes but two or three minutes, which I am willing to surrender for the calming effect it provides . . . In the future, I expect to devote more time to quieting than I do today, and to put greater effort into constructing an environment suited for and conducive to my own approach to stress management."[7]

There are four simple things to do that will give you instant relief from mental and muscular tension.

a. Pause – to change the state you are in.
b. Breathe – to focus and induce concentration.
   Feel yourself inhale
   Feel yourself pause.
   Feel yourself exhale.
   Feel yourself pause again.
c. Move – to reduce tension. Movement of any kind motorizes tension and helps reduce it.
d. Take a break – to remove yourself from the arena that is causing your tension.[8]

Try the "Exercise Break" at work, at home or at school. It's a system based on a technique of active relaxation and is fun to do. For more information, write to:

The Exercise Break
Health and Welfare Canada
Fitness and Amateur Sports Branch
Journal Towers
365 Laurier Ave. West
Ottawa, Ontario
K1P 5K2

vii. Physical Activity

"I am ready to start a new religion, the first law of which is, "play regularly". An hour's play a day makes a man whole and healthy and long-lived. A man's exercise must be play, or it will do him little good. It may even, as we see regularly in the press, kill him . . . Exercise that is work is worthless. But exercise that is play will give you health and long life . . . There is no better test for play than the desire to be doing it when you die."[9]

"don't overdo it,
underdo it.
you aren't running because
you're in a hurry to get somewhere
you will be able to run tirelessly
if you follow this simple rule:
Run WITHIN your breath,
do not run AHEAD of your breath.
(you have to run
to discover what that means)"[10]

viii. Eating Patterns

"Sweet moments on the lips are a lifetime on the hips."
"All those goodies you eat in private are likely to show up in public."

To Think About

How would you introduce this information related to lifestyle risk factors in your classes, given the need for sensitivity to individuals' feelings and the very short amount of time that is available for educational purposes?

References for Unit One:

[1] A FOLP "trainer" prepares people to teach fitness classes.

[2] From the San Francisco Chronicle

[3] Brownell, Kelly and Albert Stunkard. "Physical Activity in the Development and Control of Obesity" in **Physical Activity and Obesity**.

[4] **The Harvard Medical School Health Letter.** "Putting the Squeeze on Angina". Volume X, No. 9, July 1984, page 5.

[5] **The Harvard Medical School Health Letter.** "Heart Attacks: Dissolving the Clot". Volume X, No. 9, July 1985, page 6.

[6] **Relax**, ed. by John White and James Fadiman, Confucian Press, 1976, page 212.

[7] **High Level Wellness** by Donald Ardell, Rodale Press, 1977, page 143.

[8] From **Maximum Performance** by Laurence E. Morehouse, Ph.D. Pocket Books, New York, 1977.

[9] **Running and Being** by George Sheehan, Warner Books, 1978.

[10] **The Zen of Running** by Fred Rohe.

Unit Two:
Basics About Group Classes

Unit Two:
Basics About Group Classes

There are as many ways to lead a fitness class as there are fitness leaders. Although many leaders start their classes standing, some prefer to start lying down or sitting. Some participants want to work more on flexibility and muscular strength; others want an advanced cardiovascular workout. The purpose of this Unit is to describe how to put a single class together; Unit VI: Program Planning Basics describes how to develop a group of classes into a program that meets the needs of both you and your participants.

All fitness classes have two things in common: they all incorporate all of the components of physical fitness in varying degrees and they all include three major phases: warmup, workout and cooldown.

I. The Components of Physical Fitness

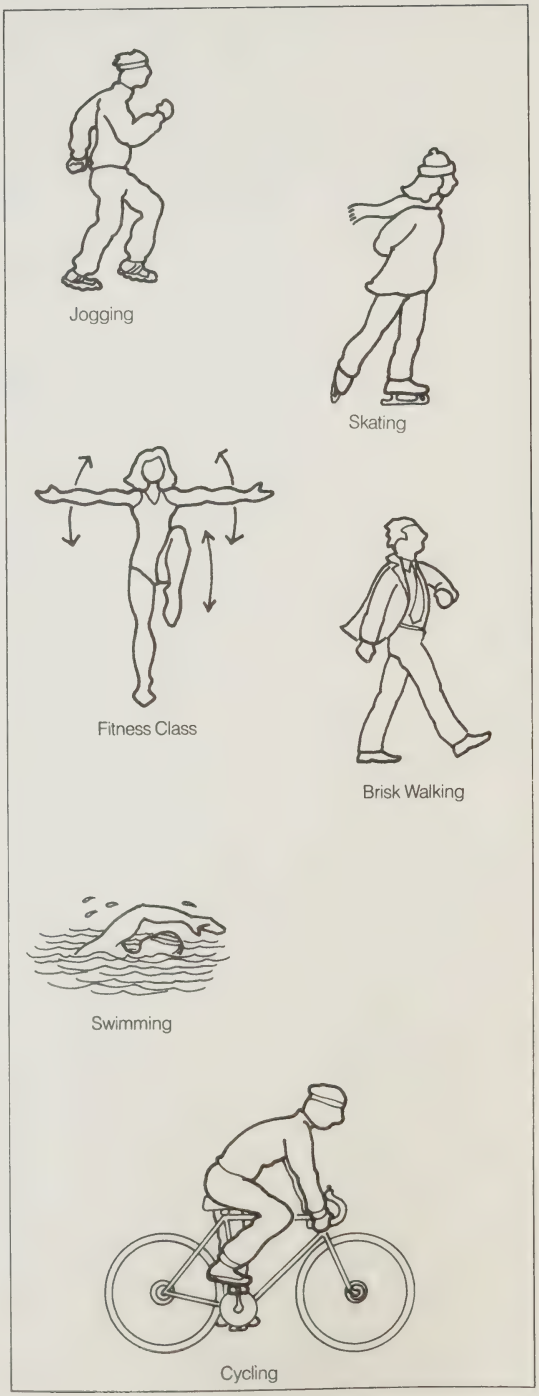
There are five major components of physical fitness that leaders need to include consciously in all classes:

1. Cardiovascular Endurance
2. Muscular Strength
3. Muscular Endurance
4. Flexibility
5. Balance and Coordination

These components have evolved over the years; initially, the first three components were considered to be the most important. As knowledge of physical injuries emerged, flexibility was included as being crucial from a preventive point of view. Now that people are staying fit for longer periods of time, the fifth component – balance and coordination – has come into prominence as an important element to train especially from middle age onwards.

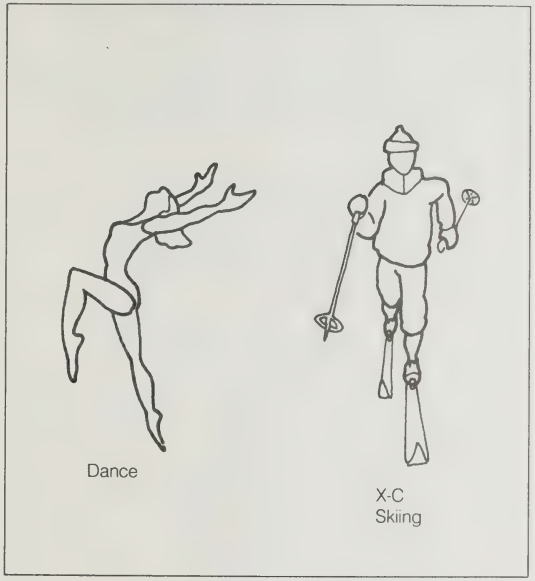
1. Cardiovascular Endurance Cardiovascular endurance refers to the ability to continue strenuous tasks that stress the circulatory (heart) and respiratory (lungs) systems for long periods of time. During vigorous physical activity, the demand for oxygen and nutrients by the working muscles may increase 15 to 20 times over what they need during quiet resting states. The more oxygen that the system can pick up from the lungs and unload to the working muscle cells, the more work the person will be able to perform before exhaustion sets in. The best system is the one that can deliver and use the highest amount of oxygen per unit of body size, i.e. maximum oxygen uptake. Stressing the cardiovascular system on a regular basis will lead to a system that is more efficient.

Your heart is a critical part of this system. It is the pump that sends the vital fluid to and from the



lungs, and to all parts of the body. The best pump is one that can increase its performance the most (cardiac output), and is the most efficient. Here are some interesting facts about the heart which you may wish to pass on to your participants.

- normal "resting" heart rates may vary from 50-100 beats per minute
- heart rates are slowest during sleep, increase slightly upon awakening and gradually increase throughout the day
- a change in posture from lying to sitting to standing increases your heart rate
- smoking, drinking alcohol or coffee, being tired, having a high temperature, may raise a resting heart rate as much as 10 beats per minute
- women's resting heart rates average four or five beats per minute faster than men
- excitement, emotion and stress make a heart beat faster
- the maximum heart rate decreases with age – about one beat per minute per year after age 20
- the maximum heart rate is not an indicator of cardiovascular condition

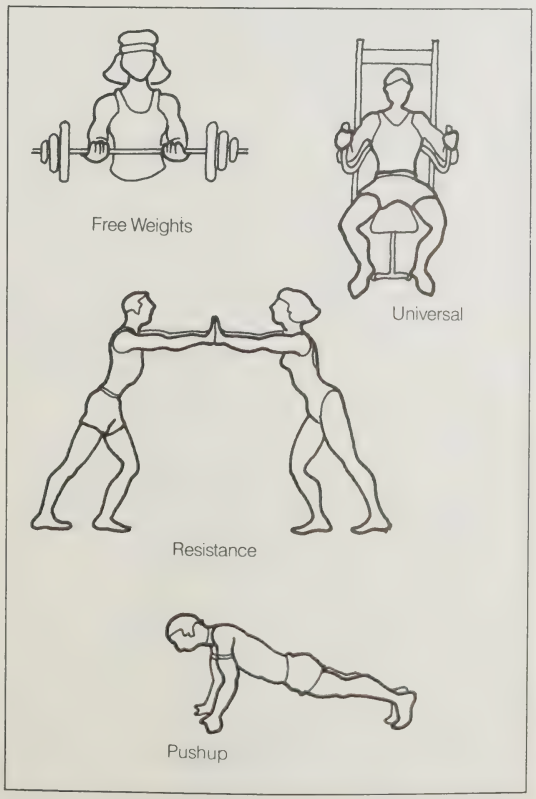


2. Muscular Strength Strength is the maximum tension that a muscle can exert in a single contraction. Strength is muscle-specific. You may have very strong leg muscles but relatively weak back muscles. In the design of exercise programs, it is important to include a number of strength exercises in order to bring about changes in specific muscle groups. Some muscle groups may be more important than others, depending upon the people involved and their requirements for daily living.

Resistance training is the key to improving strength. The resistance could be a barbell, your own body weight, gravity, water, or a partner. The activity involves contracting the selected muscles at a load of 75% of maximum 6-8 times, and repeating this for 3-5 sets – e.g. lift a barbell 6-8 times at 75% of what you could maximally lift or do 6-8 pushups from your toes if that provides 75% of your potential pushup ability, and repeat this 3-5 times.

Strength exercises should be repeated every other day. As improvement occurs, the load may be increased: this type of training is called "progressive resistance". Be sure to caution your participants to start their strength program very gradually in order to avoid damage to muscle – e.g. start pushups from the knees first.

You can expect significant strength increases early in the training program. When strength training is stopped, muscular strength will be progressively lost and often at a faster rate than it was gained.

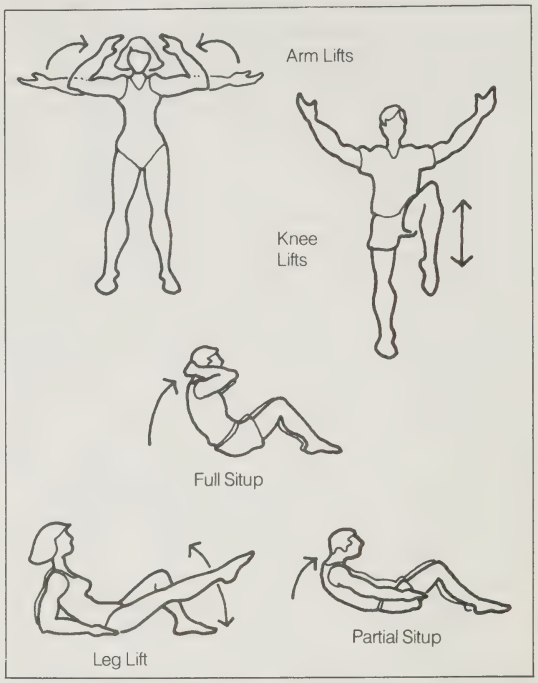


3. Muscular Endurance Muscular endurance refers to the ability of a muscle group to perform repeated contractions over a period of time. If you think of muscular strength as how much you can lift in a single effort, then muscular endurance refers to how many times you can lift a specified sub-maximal amount.

Muscular endurance is specific to a muscle group. Individuals may display relatively high levels of muscular endurance in their leg muscles, but may have relatively low levels of muscular endurance in their abdominals or upper body muscle groups.

Muscular endurance can be trained and improved to a relatively large extent. If the action is carried on repeatedly to the end point of fatigue on a regular basis, then the endurance capability of that muscle group will gradually improve. Where a large amount of muscle mass is involved, a considerable demand is placed upon the cardiovascular system to send essential nutrients to the muscle.

100% improvements in pushups and situps may occur as early as 6 to 8 weeks in individuals with relatively low levels of initial muscular endurance. Some of the early increases in performance are due to familiarization, and learning the small amount of skill required for the movement.



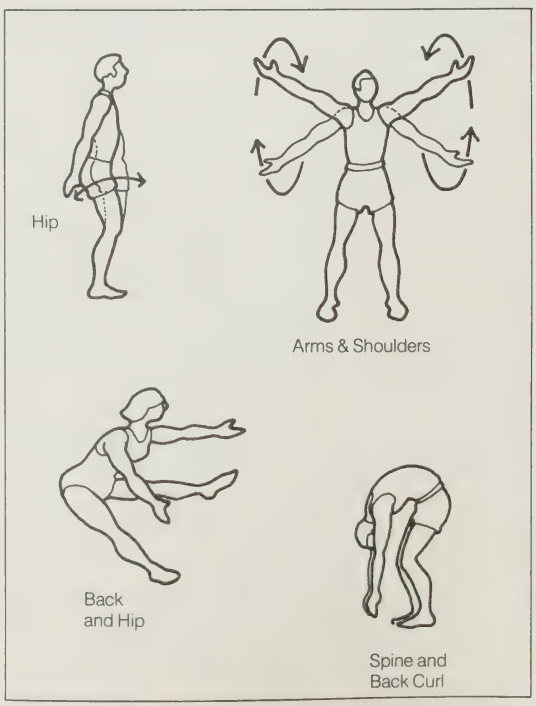
4. Flexibility Flexibility is the range of motion at a joint or a series of joints. The extent to which you can bend forward and then arch backward is the flexibility of the hip joint and the lower spine. The greater the range of motion, the greater the flexibility of the joint. Normally, most joints have backward-forward flexibility, side to side flexibility and circular or rotational flexibility.

Greater freedom of movement at each joint improves a person's ability to function and makes movement more efficient. This necessitates pliable muscles and tendons and supple, supportive ligaments.

Flexibility is joint-specific. It does not necessarily hold true that if a person has good ankle flexibility, they will also have high levels of flexibility in the hip and shoulder joints. You need to ensure that you work on the flexibility of all joints in your classes.

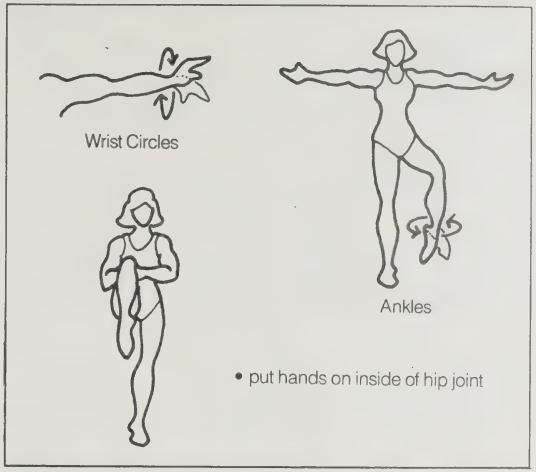
Flexibility is limited by the condition of the ligaments and layers of connective tissue surrounding the joint. Joint structure and muscle extensibility will also limit the range of joint action, as of course will disease and injury.

Improvement in flexibility can occur at any age. Greater and faster improvements can be expected when younger because of the greater elasticity of



the muscles and ligaments in younger people. Flexibility exercise becomes more important with advancing age as decreasing levels of physical activity may lead to a decrease in the range of motion. Maintaining adequate levels of physical activity can prevent a greater loss of flexibility and thus slow down the effects of aging.

To improve flexibility, use static stretching, where you hold a stretch at its end-point for at least 10-30 seconds. When moving a joint through its range of motion, e.g. ankle circles, do so slowly, a minimum of 6-8 times. Be sure to educate your participants about the need for a smooth and gentle movement as opposed to a bouncy one. When you want to move to music while stretching, remind participants either to hold a static stretch or to "pulse, not bounce" – i.e. make the movements gentle, like your pulse, not harsh like a bouncing ball.



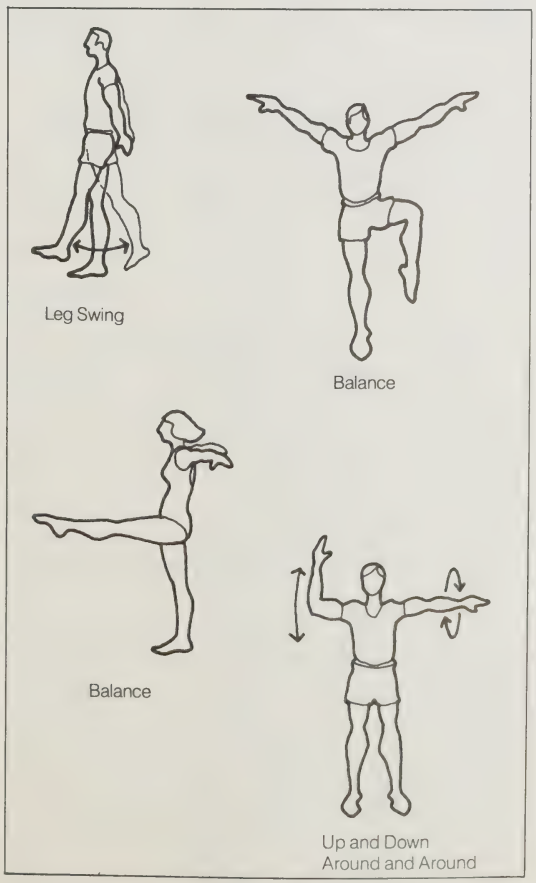
5. Balance and Coordination Balance is the maintenance of equilibrium. Static balance is when the body maintains stability and no movement takes place, as when you balance on your tiptoes without moving. Dynamic balance involves maintaining stability while there is movement. An example of this occurs when you walk or perform on a balance beam.

It is important for older adults to practice their balance on a regular basis as this component of fitness is often difficult to maintain as you grow older.

Coordination is the ability to integrate movements involving different muscle groups into a single pattern. There is hand-eye coordination. Throwing or kicking a ball against a wall and catching it or returning the kick demands control, timing, accuracy and steadiness. A coordinated movement not only involves causing a muscle to contract at the right time with the right intensity, but it is also dependent upon the relaxation of the muscles not used in the movement.

Most activities in fitness classes involve balance and coordination at the same time – e.g. the grapevine dance step or walking on one heel and one toe.

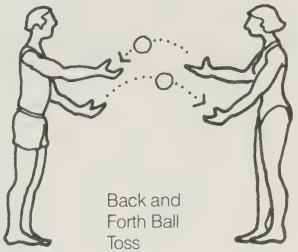
This last component is the key in designing classes to facilitate stress management. It is usually the focus on having to be coordinated and balanced that takes participants' minds off daily worries and involves them completely in the class – in the "here and now".



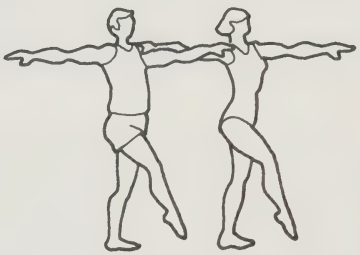
Other components of fitness include:

- speed: velocity of the body between two points
- explosive strength or power: how quickly you can apply your strength
- agility: the rapidity, care and accuracy with which you can move in response to stimuli

Although these components can be important factors in training for specific sports or recreational activities, they play a lesser role in general fitness and are therefore not usually included as a regular part of planning a class. They may be introduced as part of "games" or special movements after a good base of general fitness is developed.



Back and Forth Ball Toss



Grape Vine Hands & Shoulders

In Summary

1. Which of these components do you enjoy most as a participant in a fitness class?

_____

Why?

_____

_____

2. Which of these components do you enjoy least as a participant in a fitness class?

_____

Why?

_____

_____

3. Which of these components are you most comfortable working with as a leader?

_____

Why?

_____

_____

4. Which component do you need to work on most as a leader?

_____

What could you do to improve how you work with this component?

_____

_____

_____

_____

II. Putting A Class Together

1. A Framework For Classes: Warmup, Workout, Cooldown Each of the components in the previous section is used in a variety of ways in each class. One approach to organizing a class looks at three phases that create a framework for the class. The following chart describes when each phase occurs, what it involves, why it is included in each class and some tips about how to make it successful.

a. Warmup – the first 10-30%

What

- prelude to demanding physical work
- includes preparatory work for the five major components of fitness, e.g.: **cardiovascular** – brisk walking, light jogging, **muscular strength and endurance** – basic muscle work such as abdominal contractions while walking **flexibility** – initial "wakeup" types of stretching **balance and coordination** – simple tasks such as walking on one heel and one toe
- involves mental preparation for being in the "here and now" of the fitness class

Why

- to provide a transitional period from everyday life into a fitness class – an opportunity to focus mentally
- to prepare the body for strenuous activity by increasing the body temperature, blood flow and muscle efficiency, lubricating the joints
- to prevent injuries such as muscle strains, tendon and ligament problems

How

- begin the warmup by asking people to focus on a particular aspect of the class e.g. what they want out of class
- be sure to warm up all five fitness components
- do some light locomotor or muscular work prior to stretches so that muscles will be warm and stretch easily
- involve all the major joints and muscle groups in the stretching sequence
- use stretches that are either static or very gentle pulsing; don't bounce
- use simple exercises for balance and coordination at the start, progressing to more difficult movements at the end

b. Workout – the major part of class, about 50-80% of total

What

- the major physical work of the class
- includes appropriate level exercises for the components of fitness that you want to emphasize

Why

- to improve the effectiveness and efficiency of the major components of fitness
- to develop skills in body awareness
- to become more appreciative of physical potential

How

- use a lot of variety in your cardiovascular work – try jogging, twisting, reaching, running, kicking, bending, dancing etc.
- taper the cardiovascular section at the end to avoid blood pooling in the legs, dizziness, etc.
- use a variety of muscular strength and endurance exercises to work the major muscle groups e.g. have 3 ways to train the abdominals, not just situps
- vary the format for your workout section; you may have a "stretch and strength" class which does no cardiovascular per se; be prepared to adapt your format to suit your group

c. Cooldown – the third part of the class, about 10-20% of total class time

What

- the recovery period from strenuous work
- emphasis is on stretching, controlled breathing
- includes a focus on "relaxation" and a calm and settled feeling of accomplishment

Why

- to allow the body's systems to return to "normal" (pre-exercise state)
- to stretch "tight" muscles after strenuous physical work and to improve flexibility
- to pause prior to returning to daily life

How

- cooldown each of the 5 components; most leaders have a separate cardiovascular cooldown prior to this phase
- beginner classes need a longer cooldown than others
- be sure to stretch all of the major muscle groups that you have been working; hold each stretch at least 8-10 seconds
- include breathing exercises and activities such as self massage and facial relaxation that encourage mental relaxation as well as physical
- end the class on a thought suggestion that people can carry with them e.g. a short quotation about lifestyle

Although each class has three distinct phases that involve the five major components of fitness, there is an enormous amount of flexibility in how you can put together a class or a series of classes into a program depending on your needs and interests and those of the participants and the sponsoring organization. The "Sample Class Times and Formats" that follow describe some of the options available to you.

2. Sample Classes and Time Distributions[11]

Class Segment / Class Level	Pre-Basic	Basic	Intermediate	Advanced
Warmup	30%	20%	15%	10%
Cardiovascular	25%	35%	40%	50%
Muscle Conditioning	25%	30%	30%	30%
Cooldown	20%	15%	15%	10%

Think about this chart in relationship to a 30 minute class that is at an advanced level. Would you adjust the warmup and cooldown times or leave them as is?

5. A Single Class

One of the most popular formats for fitness classes follows this simple outline:

Warmup	– includes all five components with emphasis on stretching slowly
Workout	– cardiovascular, including cooldown – muscular strength and endurance – includes relaxation
Cooldown	– emphasis on stretching – includes relaxation

Here is what might happen in each phase of this single class:[12]

a. Warmup

i. Circulatory:

- walking, tensing and relaxing movements, emphasis on breathing deeply and easily, slump and shake various body parts
- mobilize muscles within their current range of motion
- twisting gently
- dance-type movements to replace walking if space is limited and for variety

ii. Stretching

- easy stretching NOT to improve flexibility but to put muscles back at their resting length and release tension

• focus particularly on muscles that will be used in the cardio portion e.g. calves, rear and front thigh, outer thigh and buttock, lower back

b. Workout

i. Cardiovascular

• jogging, skipping, rhythmical jumping, can can, leg exchanges and hops, kicking legs in all directions, movements from dance-jazz, folk hoe downs

• limited only by imagination and preferences of the group

ii. Recovery

• a relaxed jog or walk and other slow locomotor variations that help to bring heart rate down

• swinging and kicking movements that help leg muscles to "massage" the blood from the legs

• lie down and shake legs above you and massage them with your hands

• leg kicking, leg raises and upper body endurance exercises can also be incorporated so that this is a recovery as well as the beginning of muscular endurance exercises

iii. Muscular Strength and Endurance

• muscle endurance exercises involve moving limbs or the weight of the body against the force of gravity

• this is a chance to incorporate other components of fitness such as balance and coordination

• experiment with different positions to "invent" exercises

• try to logically connect standing, kneeling, sitting and lying positions without a great deal of getting up and down from the floor; this improves the flow of the class and also saves time

c. Cooldown

i. Stretching

• Stretch all the major muscle groups that you have worked

• it is often a good idea to intersperse this stretch with the endurance exercises; for example, when working the outer thigh for a long time, either by lifting the leg to the side or by supporting the body weight in a kneeling position, stretch it to relieve the discomfort that this exercise often creates

• stretch slowly and not with a bouncing motion

ii. Relaxation

• exercises include breathing deeply, visualizing warm and relaxing scenes, tensing and releasing muscles one after another, giving oneself a massage in tense areas (temples, jaw, neck) or just feeling heavy in each body part

• emphasize letting the body weight sink into floor

• look for tense areas and let them go

Exercise

Select one phase of your class that you would like to improve. Create a series of exercises/activities that are appropriate to that phase and that you would enjoy doing. You may wish to refer back to the "Components of Fitness" for movement ideas.

Phase: _____

Time	Exercises/Activities	Stick Figures

III. Using Music

Most people like moving to music, and the addition of music as a primary element in fitness classes has encouraged huge numbers of people to change their activity levels for the better. At the same time, however, people who would rather exercise without music are having difficulty finding classes to their liking. Though not all group classes need music to be successful, music can add a very special element for those who want it. The purpose of this section is to provide some basic guidelines for how to use music in fitness.

1. The What[13] There is no such thing as a definition of music. Each of us has our own experiences, attitudes and personal preferences that can help describe what music means to us, but it's impossible to create a standard definition for everyone. What is noise to some is nirvana to others.

2. The Why Moving to music is something much more than exercising while music is playing in the background. It involves using music as part of the learning experience, as part of all those conditions for good classes that you will read elsewhere in this book: effective climate setting, safe exercises, healthy communications etc. Whether you use tapes, records, discs, pianos, drums etc. there are a number of further reasons for using music in your classes:

- to add an additional enjoyable facet to learning – one that is highly motivating
- to set a particular mood, depending on the type of music selected
- to control the pace of various parts of class – e.g. slow, restful music during the relaxation sections, peppy music during cardiovascular
- to distract people's attention from their physiological responses to exercise – e.g. to extend the cardiovascular section
- to add an element of dance
- to encourage improvisation e.g. "What would you do to this piece?"
- to encourage communication among participants in response to a certain piece
- to create a holistic moving experience, where body, mind and spirit are totally involved in the class

3. The When Use music to suit your goals with a group. This may involve a taped, non-stop, 45 minute class or it may be a one and one-half hour dance-fit class with records and no music at all during the 10 minute body awareness section. The challenge is to "use" music creatively and not to be controlled by it, i.e. to stop and start as you see fit, not to be pushed by the music.

4. The How[14] The rhythm of the heart is a simple 2/4 rhythm with the accent on the first beat. Translated into musical terms, this becomes a march with two beats (two feet), with the accent on the first beat (left!). In musical notation, this is shown as two notes per measure or bar as follows:

One Two One Two

2/4 time is the rhythmic pattern of a march.

Just as each component of fitness requires specific exercises for improvement, each particular movement demands a matching rhythm. Most exercises designed to increase muscular endurance (e.g. situps or side leg raises) are performed in two or four parts, and therefore fit music with a 2/4 or 4/4 rhythm.

Exercises which involve swinging (e.g. arm swings), rolling (e.g. hip rolling) or swaying are more suitable done to a waltz rhythm i.e. 3/4 or 7/8 time. A static stretch exercise, designed to promote flexibility, can be held comfortably for three, six or twelve beats in this rhythm.

ONE-two-three ONE-two-three

3/4 time – waltz rhythm

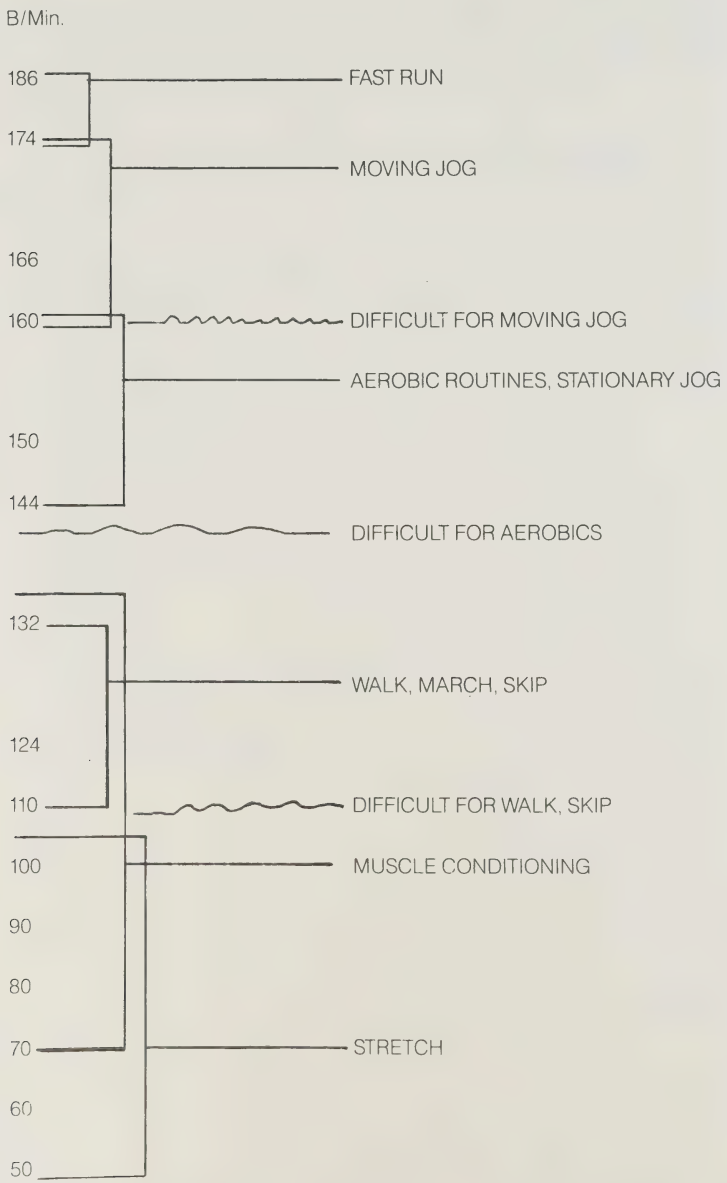
Many basic dance rhythms can also be used in a fitness workout to provide variety in movement e.g. polka or Charleston rhythm.

Tips:

- musical sentences are divided into phrases or musical ideas. Phrases are often grouped in fours; you can count them as **1**234, **2**234, **3**234, **4**234. You will notice the end of a phrase because the music has a natural pause in it – these pauses provide natural breaks for changing exercises or making comments.
- select music that has a clear, distinct beat so that most people will hear the rhythm clearly. Vague jazz rhythms with alternating or varying beats can confuse participants who are leaning on the music as a guide for their movements.
- keep the level of music appropriate so that participants can hear your instructions.

Using music well in your classes can be an ongoing process of enlightenment. The field of music therapy is just beginning to assert itself as a primary force in healthstyles and will no doubt offer real challenges to fitness leaders in years to come.

Music Selection Guidelines[15]



Summary: 170 - 180 Run
164 - 174 Jog
144 - 164 Stationary Jog
110 - 132 Walk, March, Skip
70 - 138 Muscle Conditioning
50 - 106 Stretch

IV. Designing A Class

With some Basics about Group Classes as groundwork, the next step is to put together/design a class that you would feel comfortable leading. The form that follows is designed for that purpose.

Date/Time of Class: _____

Target Group: (age, special needs and interests, limitations)

_____

_____

Number in the Class: _____

Fit-Tip for Today: _____

Fitness Class Planning Worksheet[16]

Announcement or
Fit Fact for Week:

_____

_____

Instructor: _____
Class Level: _____

Segment	Time	Music	Beats Per Minute	Activity
	Warmup			
	Workout			
	Cooldown			

Total Time:
General Comments:

Check Yourself: Was That Class Complete?[16]

_____ 1. Adequate Circulatory Warmup
_____ 2. Adequate Warmup Stretches
_____ over-all body stretch
_____ neck and shoulder
_____ lower back
_____ groin
_____ hamstrings
_____ quadriceps
_____ hip flexor
_____ calves
_____ 3. Cardio-Respiratory Workout
_____ CV warmup
_____ peaking
_____ cooldown
_____ 4. Complete Muscular Strength and Endurance Workout
_____ upper abdominals
_____ lower abdominals
_____ oblique abdominals
_____ arms
_____ chest, back
_____ hamstrings and gluteals
_____ hip flexors
_____ lateral thigh
_____ front thigh
_____ medial thigh
_____ 5. Adequate Cooldown Stretch (same muscles as in #2)
_____ 6. Relaxation Components
_____ 7. Fit-Tip/ Announcements

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[12] Hall, Linda. Unpublished Paper. "Putting a Fitness Class Together." Adapted.

[13] Strachan, Dorothy. **Music**. A Manual for Fitness Leaders. Fitness Ontario Leadership Program. Published by the Ministry of Tourism and Recreation, Toronto, 1983. page 4. Adapted. For more information refer to all the FOLP Manual Specialties.

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Unit Three:
Basics About Anatomy

Unit Three: Basics about Anatomy

Watching bodies is fun. And as a fitness leader you have a special licence and responsibility to watch all kinds of bodies move through all sorts of configurations with very few clothes on! A trained eye can pick up enormous amounts of information simply by watching these bodies move. The intent of this Unit is to educate your fitness leader's "eye" so that you will feel comfortable and confident designing and leading classes based on sound principles applied from anatomy, physiology and movement analysis.[17]

Anatomy may be defined as:

"1. The structure of an organism, or of any of its parts.
2. The science of the structure of organisms, as of the human body, and of the interrelations of their parts.
3. The art or practice of anatomizing.
4. A skeleton.
5. An anatomical model or cast."

This definition of anatomy provides a framework for how we will be looking at the anatomical tools of the fitness leader – the bones, joints, ligaments and muscles that work to make movement. The focus in this section is on applying information about the skeletal and muscular systems of the body so that you can use it to solve problems and create new approaches for use in your classes i.e. Praxis – theory into action.

I. Tools of the Trade: Bones, Muscles and Joints[18]

The team of nerve, muscle and bone must work together to create voluntary movement. Messages to specific muscles are transmitted down the nerves, stimulating the muscle to contract; the contraction of the skeletal muscle produces a shortening and by virtue of its attachment to a bony lever, movement occurs. The characteristics of the movement are very much dependent on the special arrangement and communication that occurs within this team.

1. Bones

The human skeleton has been shaped by a decision over a million years ago to stand erect. In simplest terms, the skeleton is really a tower of bones put together with hinges and joints, superbly rigged and balanced so that people can run, jump and bend despite small feet. The bones give the body its general shape; they support the body and protect the organs inside it. A good example of the protection afforded to the delicate internal organs is provided by the rib cage which protects the underlying heart and lungs.

For purposes of classification, bones are divided into four categories:

- **long bones** such as those in the legs and arms
- **short bones** such as those found in the wrist and ankles
- **flat bones** such as the ribs, breastbone and skull
- **irregular bones** such as those of the spine.

Their specific function can be understood by their location. Some bones are basically protective and contribute to the formation of the walls of the body cavities. These include the vertebrae, the skull, the jaw and the ribs and sternum. Another group of bones are the levers for the actions of the muscles of the limbs. Examples of this type of bone include the upper arm, thigh, forearm and leg.

Bones are both elastic and rigid. The elasticity or flexibility possessed by bones is due to the organic matter (protein) that they contain. The rigidity is due to the inorganic matter (minerals such as calcium and phosphorus). The relative amount of organic and inorganic matter varies with age. With aging the amount of inorganic material increases and bones lose their elasticity. As a consequence, fractures in middle life are more common.

2. Joints and Ligaments

Joints are formed when two or more bones of the skeleton come together. The structure of a particular joint is closely related to its function. In some areas, such as the vertebral column, only a slight degree of mobility is desirable whereas in other areas, such as the limbs, a wide range of flexibility is essential.

Connective tissue helps to support and stabilize the joints and also to enable movement.

LIGAMENTS are bands of fibrous tissue that connect bones together. They prevent movement in an undesired plane and also limit the range or extent of undesired movements. Their basic function is to stabilize the joint.

TENDONS are the tough, fibrous bands that attach muscle to bone. Although muscles and tendons work closely together, the tendons, which are extensions of the muscles, don't actually contract. For example, think of the Achilles tendon in your heel, which starts at your wide calf muscle and turns into a much narrower band above your heel.

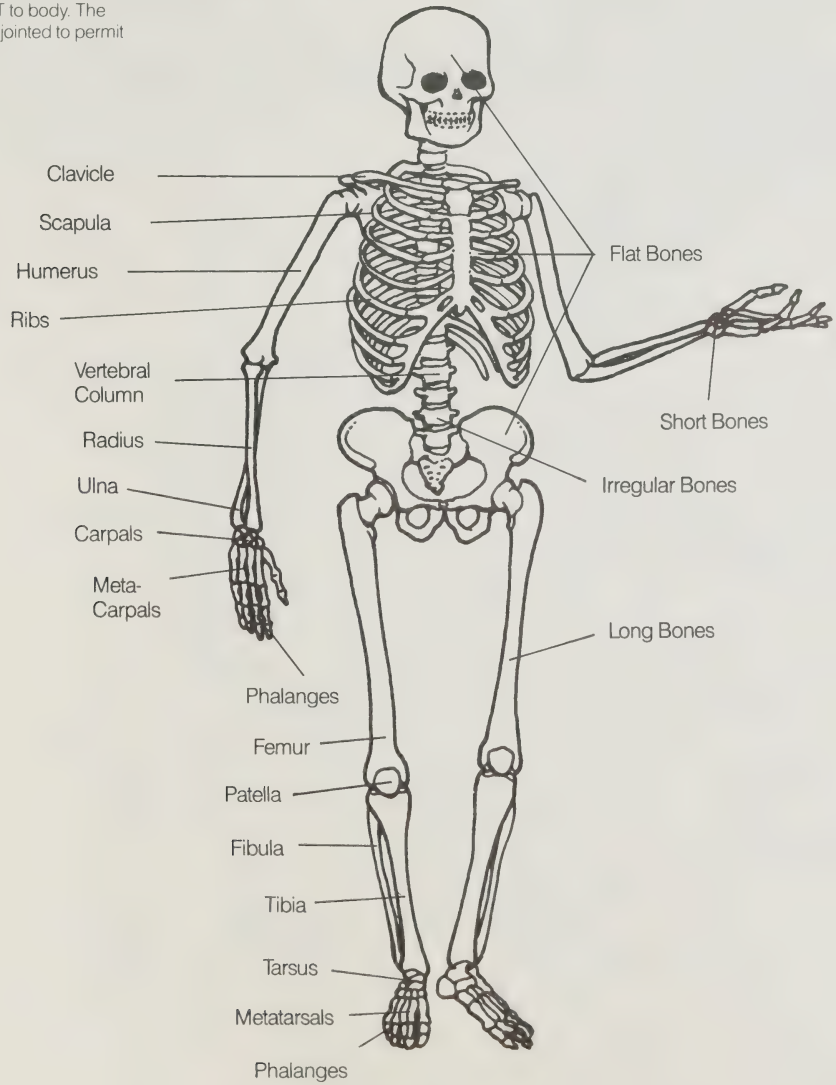
CARTILAGE is the tough, gristle-like substance that protects the bones in a joint and prevents them from rubbing against each other. Some cartilage covers the ends of bones, while other types are in the centres of joints.

Joints that can move freely are called synovial

The Skeletal System[19]

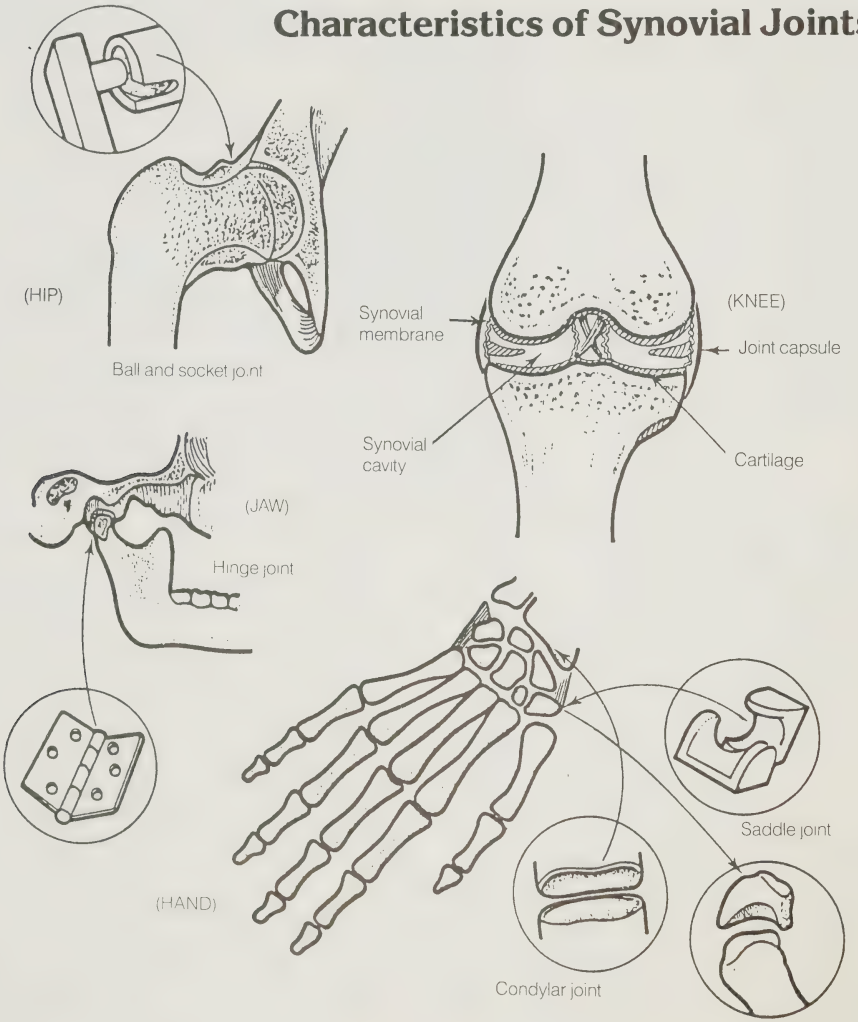
BONES and MUSCLES, concerned with MOVEMENT of the body.

SKELETON, RIGID FRAMEWORK gives SHAPE and SUPPORT to body. The SKELETON is jointed to permit MOVEMENT.



joints, as illustrated on this page. The ones in synovial joints are covered with a specialized cartilage called meniscus, which is quite elastic and also secretes a lubricating fluid. Slow, large-movement exercises during the warmup part of activity help to initiate this lubrication process and thus get these joints ready for movement.

Characteristics of Synovial Joints[20]



3. Muscles

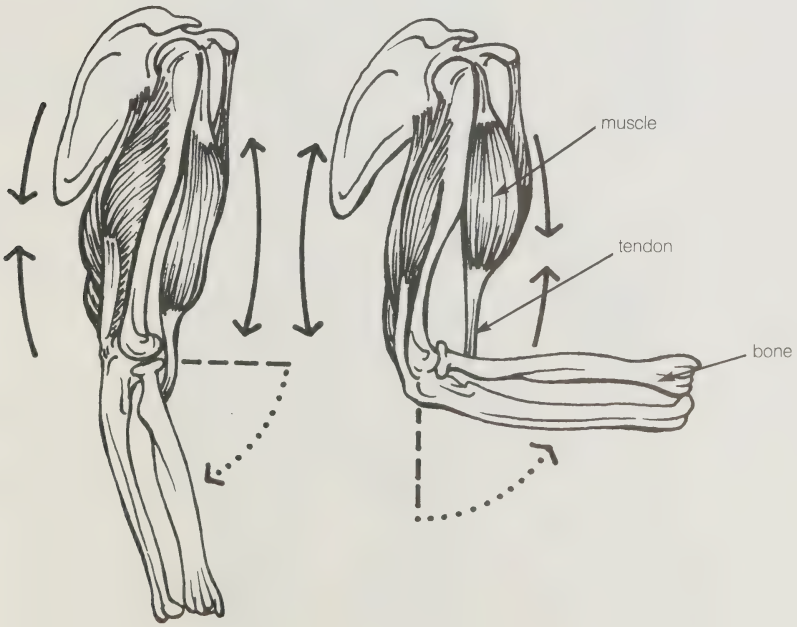
When we speak of muscles, we normally think of the coat of muscles overlapping the skeleton. This group of muscles, properly referred to as the skeletal muscles, numbers 700 and represents approximately forty percent of our body weight.

These muscles are the cables which pull on bones and make motion possible. Their function is to contract and shorten by working in pairs – one muscle contracting to pull a bone forward, the other to pull it back and in this way it is possible to perform a wide variety of actions.

TIP:

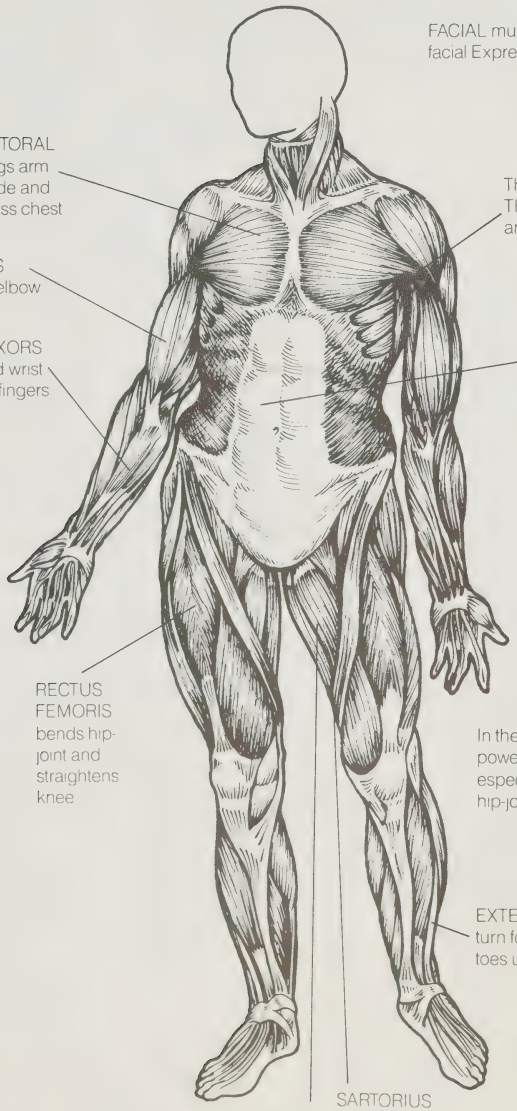
Think of muscles as cables and bones as levers. Tendons connect muscle to bone; ligaments connect bones to bones at joints.

The straightening (extending) and bending (flexion) of a limb provides a good example of the action of muscle on bone. In the case of the arm, flexion occurs when the biceps muscle contracts and pulls on a bone of the forearm. During this time the opposing muscles, the triceps, are being stretched but remain relaxed. To extend the arm, the biceps are working eccentrically and the triceps contract to pull the arm down.



The Skeletal Muscles[19]

Bones are moved at joints by the CONTRACTION and RELAXATION of MUSCLES attached to them



FACIAL muscles are involved in varying facial Expression: Speech: Chewing

PECTORAL brings arm to side and across chest

The deep muscles of the THORAX, linking the ribs, contract and relax in Respiration

BICEPS bends elbow

The muscles of the ABDOMEN are arranged in sheets and PROTECT delicate abdominal organs

FLEXORS bend wrist and fingers

RECTUS FEMORIS bends hip-joint and straightens knee

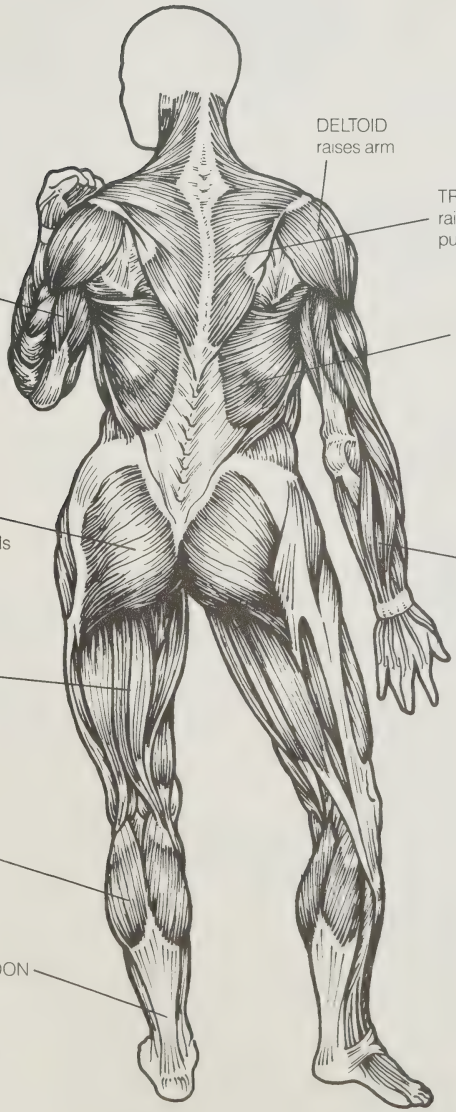
In the LEGS are found the most powerful muscles of the body – especially those acting on the hip-joint

EXTENSORS turn foot and toes upwards

ADDUCTORS of THIGH

SARTORIUS bends knee and hip-joints and turns thigh outwards

The muscles of the BACK play a large part in maintaining erect posture



DELTOID
raises arm

TRAPEZIUS
raises shoulder and pulls head back

TRICEPS
straightens elbow

LATISSIMUS DORSI
draws arm backwards and turns it inwards (it also draws an upstretched arm downwards)

GLUTEALS
move the hip-joint; also move leg outwards

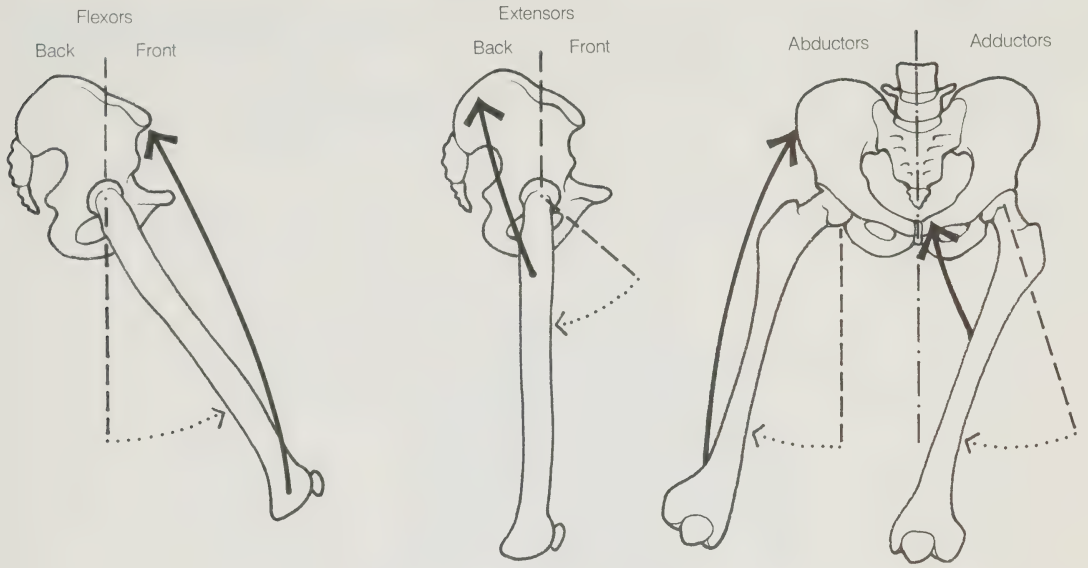
EXTENSORS
straighten wrist and fingers

HAMSTRINGS
bend knee and straighten hip joint

GASTROCNEMIUS
bends knee and turns foot downwards

ACHILLES TENDON

FLEXORS
turn foot and toes downwards



SIDE VIEW

FRONT VIEW

- Muscles which bend a limb at a joint are called FLEXORS.
- Muscles which straighten a limb at a joint are called EXTENSORS.
- Muscles which move a limb (or other part) away from the midline are called ABDUCTORS.
- Muscles which move a limb (or other part) towards the midline are called ADDUCTORS.

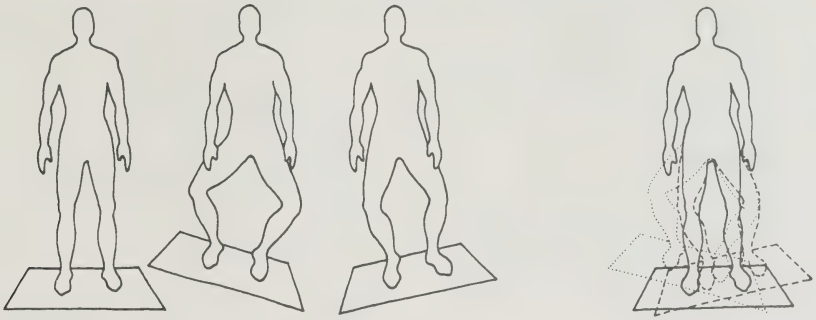
Similar to the bones of the skeleton, the muscles represent a wide range of shapes and sizes. Some muscles are small, slender and long, while others are broad and flat. How the muscles look can provide some insight into the functions they perform. Facial muscles and muscles of the fingers are very small and are capable of performing very delicate movements. Muscles of the arms, legs and torso are used in walking, running, throwing and kicking and are consequently much larger and more powerful.

The coordination of several muscles is needed to perform an activity. In walking or running, as an example, virtually every muscle of the body is performing some action.

The muscles of the four limbs are rhythmically contracting and relaxing, permitting flexion and extension of the various joints. The muscles of the upper body, the torso, contract to anchor the upper body and to move the bones of the rib cage to permit breathing action.

The muscles of the neck stabilize the head and permit movements that enable constant visual contact with the changing terrain. All of these muscles are under voluntary control in that they respond to the commands we send them. However, where several muscles must cooperate together, contracting and relaxing in different sequences and for different lengths of time, it is impossible to obtain a smooth execution of the movement through conscious control. In such cases, after prolonged periods of practice of the movement, a program is developed and stored in the brain.

The sequence of movement then occurs according to the instructions of the program and without conscious control.

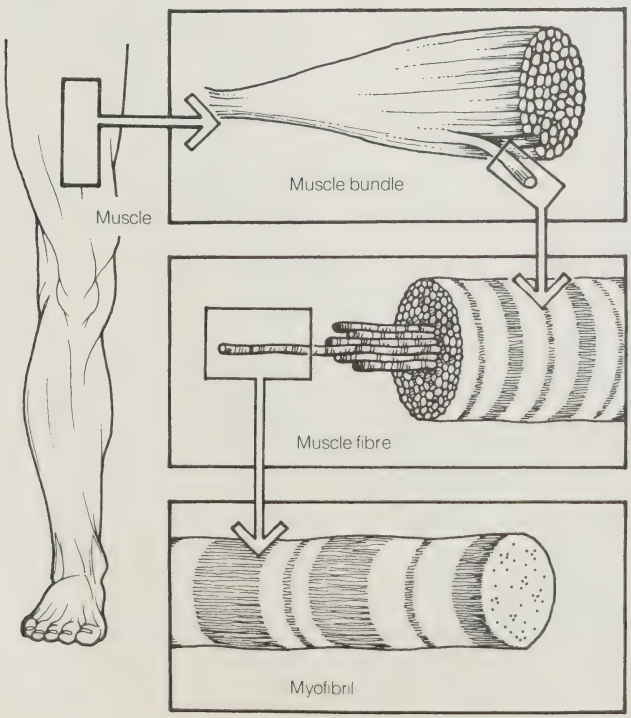


Muscle Coordination

Muscles (e.g. biceps, triceps) are really a collection of long fibres that join into a tendon at each end and insert onto the bones of the skeleton. Each bundle is separately wrapped in a sheath that serves to hold it together and protect it. Within each bundle are thousands of individual cells or muscle fibres. The muscle fibre is threadlike, its length being much greater than its diameter.

Structural Organization of Skeletal Muscle

The contraction that occurs in a muscle is the result of the shortening of smaller units within these muscle fibres. A CONCENTRIC muscle contraction – the muscle shortens with varying tension while lifting a constant load, bringing two body parts together. An ECCENTRIC muscle contraction – the



muscle lengthens while contracting during the developing of active tension, moving two body parts away from one another. The more muscle fibres that are active within a muscle, the more tension that can be developed within the muscle.

The Stretch Reflex[21]

The stretch reflex is a basic body defence mechanism which helps to prevent muscle injury. Understanding how the two components of the stretch reflex function can help determine the best type of stretching exercises to use.

i. Myotatic or Stretch Reflex

Imagine flinging your arms out quickly to the side. This dynamic action involves stretching your biceps and contracting your triceps. As a protective reaction nervous receptors within the stretching muscle (in this case, the biceps) initiate a reflex contraction to ensure the muscle doesn't "overstretch". This is called the "myotatic or stretch reflex" and it gets stronger the faster and more intense the stretching motion. To minimize this inhibiting effect on the stretching of a muscle, it is generally recommended to do slow, controlled stretches and hold the stretch position for an extended period of 10-15-20 seconds.

ii. Inverse Stretch Reflex

A reflex action has also been found to occur within the contracting muscle. In this case nervous receptors within the tendon of the contracting muscle initiate a reflex relaxation, this time to ensure the force of contraction is not too strong for the tendons that attach the muscle to the bone. This reflex has been found to be strongest with isometric contractions (no change in muscle length) and can be used to enhance flexibility through "PNF" (proprioceptive neuromuscular facilitation) stretching.

PNF stretching involves the use of a partner and is based on the stretch reflexes. The muscle is stretched to its end point and then contracted isometrically against partner resistance. This isometric contraction of the muscle being stretched both reduces the stretch reflex (since the muscle at this point is no longer being stretched) and elicits a relaxation response from the inverse stretch reflex. With the muscle further relaxed it is then stretched to a new end point and once again contracted isometrically. By repeating this process of active stretching to the end point, isometric contraction against partner resistance, and additional stretching to a new end point, flexibility can be significantly enhanced.

The next section puts bones, joints and muscles together in a discussion of body alignment.

II. Body Alignment

Alignment is the proper positioning of parts of the body in relation to one another. Good posture results from a well positioned, healthy skeletal system. This involves:

- understanding what constitutes good posture
- feeling kinesthetically aware of where your body parts are in space
- having sufficient muscle tone for maintaining good alignment
- having the desire and motivation to achieve and maintain good posture.

The benefits of good posture can be enough motivation to start people thinking about how they stand, sit, move and lie down. There is a close link between good posture and how people feel about themselves in general. People who are happy, confident, involved with life, physically healthy and generally in good shape tend to align themselves differently than those who are unhappy, insecure, withdrawn, physically unhealthy and generally in poor shape. Think about yourself. What happens to your posture when you are:

Depressed? _____

Tired? _____

Happy? _____

Relaxed? _____

Other benefits of good body alignment include visual appearance, clothes that hang well on your body, a feeling of expansive breathing space, efficient coordination of muscles and bones, to say nothing of feeling tall, well balanced and generally good about how you are holding yourself.

1. The Silver Thread

Imagine that you have a silver thread that runs through your body, linking the bones and muscles into proper alignment and that whenever your posture is out of whack, you can simply pull gently on a few hairs on the top of your head and the silver thread will re-align your body perfectly. Use this metaphor with your participants to encourage them to think about how they are holding themselves.

Here is what good posture looks like, when the silver thread is in control:

The head is centred over the trunk with the chin level and held over the collarbone. The ears are in line with the tips of the shoulders.

The shoulders are relaxed and down with the shoulder blades flat.

The arms hang loosely, with the palms facing the sides of the body.

The chest is up and open; the rib cage feels as if it is expanded and well anchored against the spine.

The shoulders are aligned over the hips and are held slightly back and relaxed.

The back feels long and strong, slightly curved in the lower region.

The abdomen is pulled in and up.

The pelvis is tilted slightly up so that the buttocks feel tucked under but relaxed.

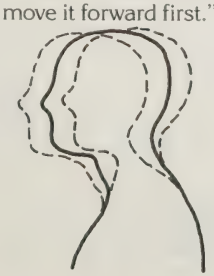
Knees are straight and relaxed – neither bent nor hyperextended.

Feet are parallel, slightly apart, with weight balanced evenly among the heels and the outside borders and balls of the feet.

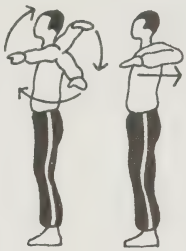
2. Problem Solving

One of the largest areas for feedback and exercise correction that fitness leaders act on is body alignment. A problem-solving approach to this area can provide a wealth of information for you to use in your classes.

Think of yourself as a body detective and suddenly posture becomes exciting. What do you think is wrong with the body alignment of each of the figures below? Draw an arrow and write a brief comment on it to indicate what changes you think each of these people should make in order to improve their alignment. When you have completed your suggestions, look at the list of common postural faults on the next few pages to make sure that you noticed all of them.

POSTURAL PROBLEM[22]	CORRECTIVE FEEDBACK	EXERCISE SUGGESTIONS
Forward Head: "Poke Neck"– head is thrust forward. 	"Focus on drawing your head back as if you were trying to brush it against a wall behind you; it is sometimes easier to do this if you move it forward first." 	**Head Isolations:** stretches and strengthens neck muscles. Hold hands at sides of head as visual guides. Move head forward, then back, then to each side. Focus on moving the head back further and further.

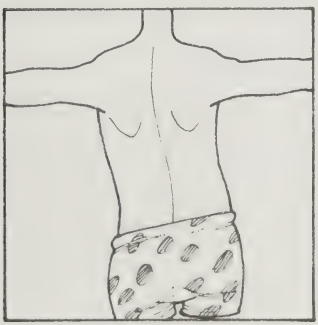
POSTURAL PROBLEM	CORRECTIVE FEEDBACK	EXERCISE SUGGESTIONS
Round Shoulders: Shoulders sag forward and down. This is usually accompanied by a forward head, sunken chest and protruding shoulder blades.	"Your shoulders are starting to draw forward. Can you feel that happening? Try dropping them back and down several times during the day, or clasping your hands behind your back and lifting your arms three times a day."	**Arm Circles:** (for forward head too) strengthens upper back and shoulders and stretches the pectorals. Extend arms at sides, parallel to the floor and circle backward four times; bend the arms at the elbows and push backward, bringing the shoulder blades together for eight counts. Keep the chin tucked and the neck extended; don't allow the head to thrust forward.

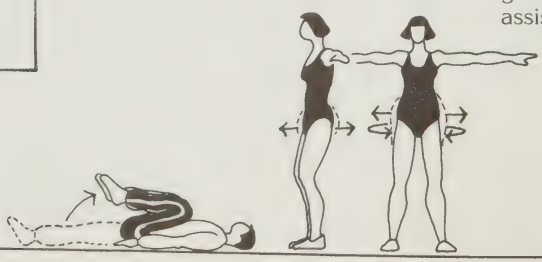


Scoliosis:
A lateral curvature of the spine; in mild cases, awareness of the problem and proper exercises will rectify discomfort; in severe cases, scoliosis is a deformity requiring medical assistance.

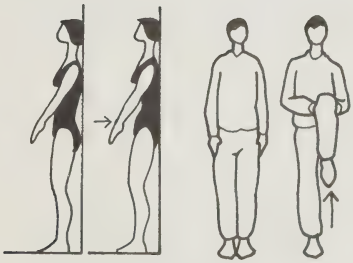
"Have you ever noticed that one hip seems to move easier than the other or that you usually carry your parcels (or kids) on one side instead of the other? You might be favoring one side of your hip area and this can cause an imbalance; think about alternating groceries or other parcels and focus in class on a very straight spine. Notice whether you usually stand on one foot and vary that too. You might want to ask your physician if you have any spinal alignment problems that we could work on with exercise."

Hip Isolations: stretches and strengthens back muscles and hip area. Stand with feet about 18" apart, arms extended parallel to the floor. Eyes focus front. With knees bent, move hips forward, then in neutral position, then backward, then neutral then to the R side, then the L side, then in a circle to the R, then in a circle to the L. Ask participants to notice which side "seems most open and easy to move". Lift the abdominals up during this exercise.
Bringing your knees to your chest one at a time while lying on the floor, knees bent, will give a gentle stretch to your back and assist this problem.



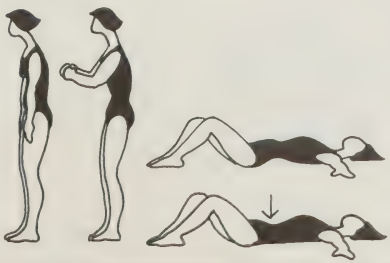


POSTURAL PROBLEM	CORRECTIVE FEEDBACK	EXERCISE SUGGESTIONS
Lordosis: "Sway Back" – increased hypertension in the lumbar region of the lower back.	"Your lower back looks a little over-arched. This can cause aches and pains in this area and will also eventually cause your abdomen to stick out. One way to see how serious the arch has become is to lie down on the floor and see if there is a space between your back and the floor. Then we work at eliminating that space. See? You could drive a Mack truck through there. Tilt your pelvis up so that the space disappears."	**Wall Meeting:** strengthens abdominals and stretches the lower back. Stand with your back to the wall and your heels an inch or two away from the wall. Press your lower back against the wall four times and holding each press for four counts. Knees to chest (above) is also good here.

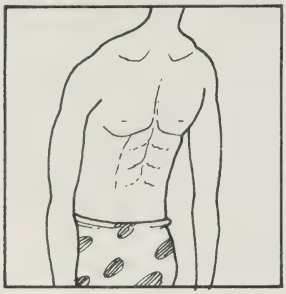
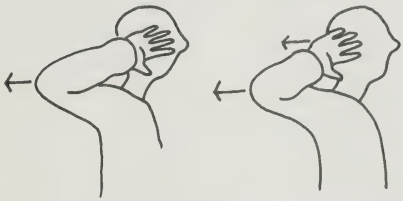


Knee Lifts: stretches the lower back. Stand tall, with feet together and arms at your sides. Lift one knee as high as you can, grasping it with your hands and pulling it to your body. Hold for a count of ten. Alternate R and L legs. Repeat four times with each leg.

Abdominal Ptosis: Protruding abdomen; this often comes along with lordosis.	"Try lifting up with your abdominal muscles and tilting your pelvis slightly so that your abdomen flattens more against your backbone."	**Slouch and Slink:** stand in a slouched position, breathing normally. Breathe in and exhale strongly as you bring your bent arms forward, hands in fists, contracting your abdominal muscles as hard as you can. Repeat four times, three times a day. **Pelvic Tilt:** strengthens abdominals. Lie on your back on the floor with knees bent and slightly apart. Press your lower spine down hard into the floor and hold it there while tightening the abdominals. Repeat six times. Exhale as you tighten the abdominals. Hold for six seconds.



POSTURAL PROBLEM	CORRECTIVE FEEDBACK	EXERCISE SUGGESTIONS
Kyphosis: "Hump Back" – round upper back. 	"Your upper back looks as if it is rounding out a bit. If you work at flattening your back, you'll have more breathing space for your lungs and you'll feel more energetic." 	**Corner Crease:** stretches pectorals. Stand in a corner, facing the wall with your arms bent at the elbows at shoulder level. With hands against opposite walls, lean into the corner. Repeat five times. **Prone Arm Raise:** strengthens upper back and shoulders. Lie face down on the floor, arms stretched out in front. Raise straight arms toward the ceiling one at a time, then together. Repeat the three movements six times. Keep the head down.
Flat Back: Decreased spinal curvature or not enough curve, especially in the lower back. 	"It looks as if you have very little curve in your lower back; if you could develop a little more curve it would help you to lift your entire upper body more."	**Hip Isolations:** are a good exercise for this problem. Focus on extending the position that moves towards the back.
Hyperextended Knees: Knees are thrown back in a locked position. This often causes lordosis. 	"Whenever you feel your knees locked like that, wiggle them back and forward a few times to remind yourself to keep them loose. Hyperextending them can contribute to sway back."	**Squats:** strengthens the thigh muscles. Do not bend below a 90° angle at the knee.
Wings: Protruding shoulder blades. 	"Can you feel your shoulder blades sticking out at the back? If you can learn to keep them flat, you will draw your shoulders down and back and increase your breathing space."	**Corner Crease, Prone Arm Raise** and **Arm Circles:** are all good exercises for this problem.

POSTURAL PROBLEM	CORRECTIVE FEEDBACK	EXERCISE SUGGESTIONS
Sunken Chest: Low or depressed chest. 	"Your chest looks a little sunken – this can reduce your breathing space and also make a big difference to how you feel about yourself. When your chest is up and open, you tend to feel more assertive, more in charge." 	**Back Arm Reach:** strengthens the upper back and shoulders. Place the back of the R hand on the R side of the face, pressing the elbow straight back. Keeping the elbow back, reach backwards with the R hand. Repeat four times. Repeat on the L side, holding the R arm in position. **Corner Crease, Prone Arm Raise,** and **Arm Circles:** are also good exercises for this problem.

To Think About

1. Consider your own body alignment. What are your strengths?

2. What are your weaknesses?

3. Create an exercise program that you can follow for three months that will improve your posture:

Answer the same three questions for a family member or close friend:

a. Strengths

b. Weaknesses

c. Exercise Program

How might you approach this person in a sensitive and caring way to let them know you would like to discuss their posture with them?

III. Safety Check

Participants who feel safe in a fitness class are likely to have confidence in their leader. As "safe" classes become an increasingly popular issue for journalists to tackle in newspapers, it is also becoming obvious that a significant number of people in the general public question just how safe fitness classes are.

1. High Risk Areas and Contraindications

There are five generally recognized high risk areas for injuries in fitness activities. These are: neck, back, knees, shins, and feet.

You can help to prevent injuries to these and other areas of risk by encouraging your participants to read about medical self-care and what their roles are in preventing injuries to themselves in physical activity. You can also provide educational reading related to how to buy shoes, how to warm up, how to select a fitness class etc.

Another way that leaders can help prevent injuries is to look for "contraindications" in the activity environment. In other words, what indications do you have that certain activities should be avoided and in what situations. Contraindications exist in four main areas:

i. in the individual
- ask for a PAR-Q and other personal data so that you are working with the participant to avoid identified problem areas. For high risk areas such as the neck, back, knee, be sure that movements are slow, controlled, purposeful.

ii. in the facility
- check your workout areas and changing room to make sure that it is a safe, hygienic place to be where people also feel that they have privacy.

iii. in the leader
- avoid teaching or leading activities in which you don't feel competent. If you don't know a barbell from a cocktail waitress then you shouldn't be teaching weight training.

iv. in the actual activity
- use the checklist that follows to be sure your activities are safe.

2. Six for Safety

i. Alignment
- check to be sure that bodies are properly aligned while people are moving on all planes: lying, sitting, standing
- avoid hyperextension of joints – especially the lower back, neck and knees. Hyperextension refers to taking the joint 10% or more past the "normal" range of motion

ii. Base of Support
- avoid "falling down" injuries by using the appropriate base of support for the movements you design; discourage drinking of alcoholic beverages in your classes
- use caution in fast sideways movements

iii. Impact[23]
- check that people are landing "with a rolling foot", from toe to heel or heel to toe
- avoid doing exercises with too much weight on delicate points of impact, such as the knees
- reduce impact by spending less time "on the spot" during aerobics and more time in directional movements
- teach people to land from jumps with knees bent
- if you have a choice, select grass over asphalt over cement when jogging

iv. Overuse
- select the number of sets and repetitions carefully, keeping in mind the abilities of your group
- use a "two-way" theme to your exercises e.g. if you bend forward in an exercise, then you need to bend back too; if you flex, then you extend etc. "Two-way" designs prevent overuse of particular muscle groups and overextension of joints.
- complaints about "burning" and cramping are good signs of muscle overuse

v. Preparation
- ask yourself what preparation is needed to make an activity safe. For example, a light locomotor workout warms up the muscles in preparation for stretching; calf stretches prepare the legs for running or dancing
- remember that the warmup should be specific to the workout i.e. warm up the areas to be worked

vi. Education
- teach your participants to be responsible for knowing the basics about how their bodies work and move so that they can take care of their own needs in fitness workouts

Monitoring systems provide another way to ensure safe and comfortable classes.

3. Monitoring

Monitoring systems in fitness classes provide ways for participants and leaders to keep track of how they are doing, both while they are actually involved in classes and over a longer term.

One of the most common monitoring systems used by both leaders and participants involves tracking heart rates. Because heart rates increase in proportion to the intensity of the activity a person is

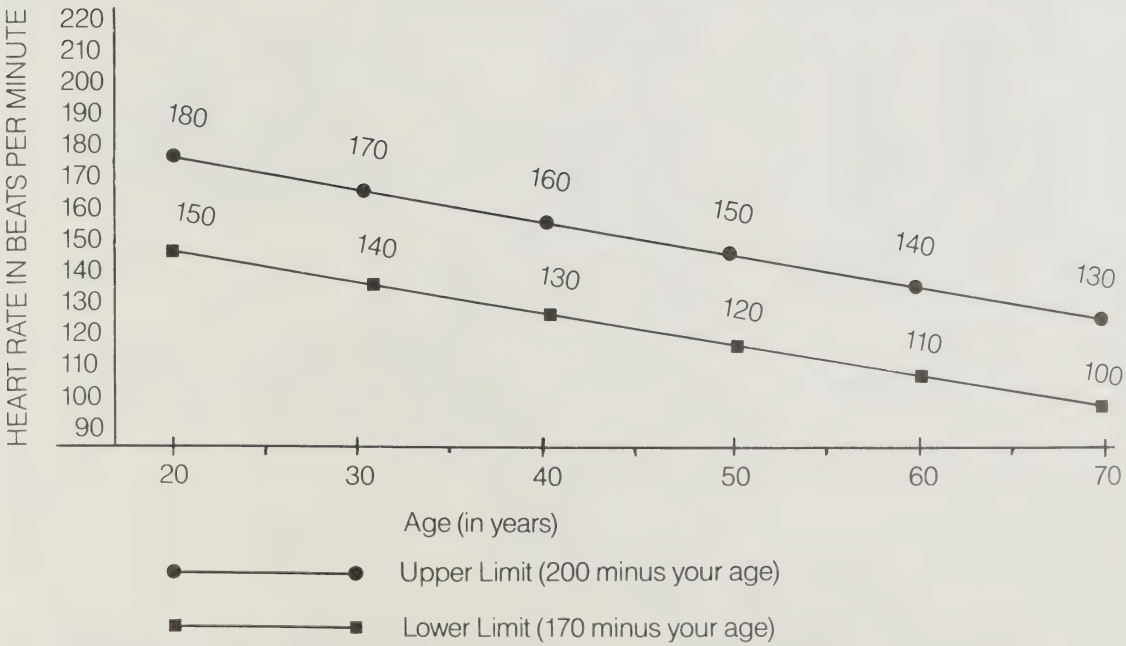
engaged in doing, they are a fairly reliable indicator of physical stress during fitness activities. Heart rates also provide a significant amount of individualization to large group classes – participants can monitor how they are doing whenever they feel like it without depending on the leader for assistance. The charts that follow illustrate Target Heart Rates in beats per minute and per ten seconds.

Note:[24]

To determine if you are exercising at the correct intensity stop your activity momentarily. Find your pulse and begin timing within 10 seconds of stopping your activity. Take your pulse for 10 seconds and then multiply by 6. Check the chart below and see if your pulse rate falls within the target zone. In the beginning keep your pulse rate near the lower limit. As you become fitter, your target heart rate can approach the upper limit.

Heart Rate Check
(10 Second Count)

Age	Lower Limit	Upper Limit
20's	25	30
30's	23	28
40's	22	26
50's	20	25
60's	18	23



Learning to "listen to your body" is an excellent way to monitor how you are experiencing physical activity. This approach has the added advantage of providing you with a great deal more information than how your heart is responding to activity. Leaders who train participants to "notice" what they are feeling as they do something in class are also educating participants to be more aware of themselves physically outside the class.

Training participants to enhance their "listening" skills usually involves teaching body isolations, muscle and joint awareness techniques, postural responsibility and breathing sensitivity. This entails giving feedback on an ongoing basis and is discussed further in this Unit and Unit V.

The following chart outlines some options for both long and short term monitoring systems in fitness.

Monitoring Systems for Fitness

	Short Term/In Class	Long Term
i. for the participant	• target heart rates • leader asks questions such as: Where do you feel this? What do you notice? Have you changed at all from the first class? • specific feedback from the leader e.g. "We have doubled our cardio time from the first class." • body awareness • talk test	• fitness appraisal • keeping a log with achievements, weight measurements etc. recorded in it
ii. for the leader	• target heart rates • body language in participants as indicators of accomplishment, dissatisfaction, technique improvements etc. • participant/observer stance – being a part of class but also standing back from it and watching what is happening • explaining what/why you are doing an exercise • watching for "danger signs" such as flushed faces, pain, muscular discomfort, dizziness, breathing problems • looking for appropriate clothing and footwear	• postural adaptations • logs of class plans • short questionnaires • verbal feedback

Unit IV: Basics About Physiology, discusses monitoring in more detail with respect to how it relates to the cardiovascular system.

The next section provides insights into exercise design, another practical application of anatomical theory.

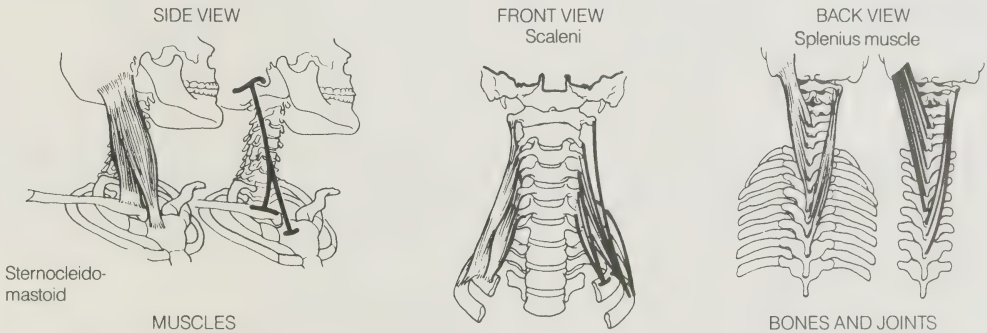
IV. Exercise Design

Exercise Design is applied anatomy – you focus on understanding how bones, joints, ligaments and muscles work together so that you can create exercises providing maximum benefit and safety for your participants.

Before fitness reached its current state of popularity, attitudes towards exercise were more predictable and there were fewer variations on the basic exercises of pushups, situps etc. Today, however, with more and more people involved in fitness, and contributions being made from fields such as yoga and dance, there is no limit to the number of variations possible in exercise design.

All the more reason why fitness leaders need to understand what these bones, joints, ligaments and muscles do and how they can work together safely to ensure comfortable and enjoyable classes. This section describes six areas of the body, suggesting the major muscles, how to find them and what exercises might be appropriate.[25] The intent is not to persuade leaders to memorize a lot of technical names, but to provide a resource that encourages familiarity with the major muscles and bones and what they do, especially in relation to common exercises.

1. The Head and Neck

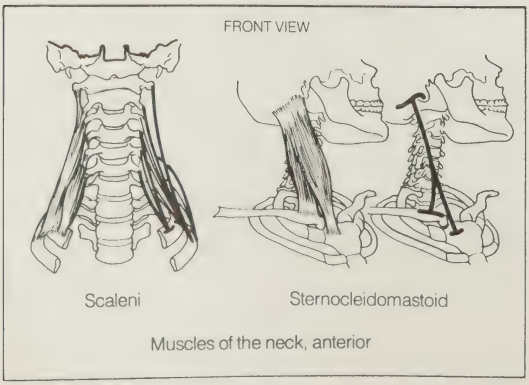


Benefits of appropriate exercise design:

- prevention of muscle tension buildup in the area
- improved posture; awareness of head position as balancing on top of the spinal column
- prevention of neck injury because of improved strength and flexibility

Muscles

Front View Scaleni, Sternocleidomastoid



Muscles of the neck, anterior

How to Feel Them

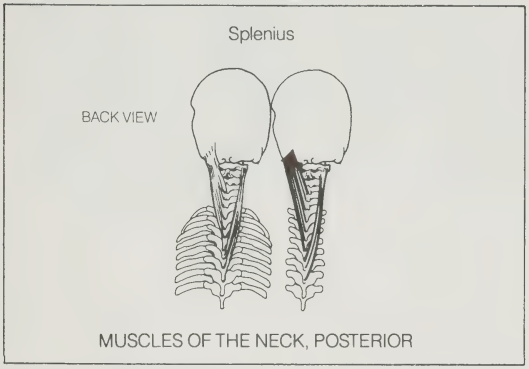
- Move your head to one side against the resistance from the palm of your hand. The scaleni will look like cords along the side of your neck.
- move your head forward against resistance from the palm of your hand. The sternomastoids will look like cords along the front of your neck.

What They Do

- flex the head and neck forward and to the side
- rotate the head

Muscles

Back View Splenius



MUSCLES OF THE NECK, POSTERIOR

How to Feel Them

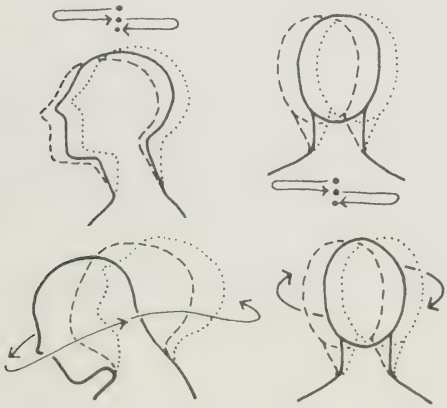
- place your fingertips at the base of your skull behind your ear.
- Turn your head to each side.

What They Do

- extension of head
- turn head to side and tilt chin up to same side
- maintain head in proper alignment – not too far forward

Sample Exercises

i) head isolations, stand with your feet about 12" apart, arms relaxed at your sides.
Bring head forward, then to neutral, then laterally L, neutral, laterally R. Repeat.
ii) move head in lateral circles
iii) head rolls, drop head gently and roll it across front of chest, then around past L shoulder, support it as you roll it backwards and then towards R shoulder and to the front again. Repeat.



Teaching Tips

- keep chin parallel to the floor
- make the movements smooth and controlled
- to increase the degree of difficulty, do these exercises while lying supine on the floor
- imagine that you can see these muscles working.

CAUTION!

- avoid hyperextension of the neck – especially with older individuals and those with circulatory problems.

This compresses the discs of the cervical region of the spine and can be an especially harmful exercise at the beginning of a class. Instead, use the neck muscles to support the head and do a controlled, smooth head roll that does not hyperextend the neck.

Designing Your Own

1. Which of these muscles are most familiar to you?

_____
_____
_____
_____

2. Why are they more familiar?

_____
_____
_____
_____

3. Which of these muscles do you want to focus on using more in your classes?

_____
_____
_____
_____

4. For the muscle(s) mentioned in #3, create an exercise design sequence that you can use in your next class. Include a minimum of three exercises or major movements in the sequence, along with the number of counts for each movement.

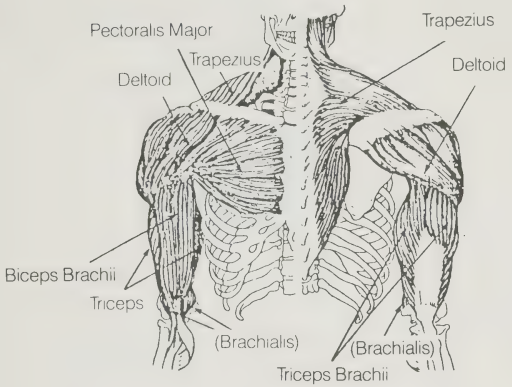
Muscles:

Purpose of the Sequence:

The Exercise Sequence:

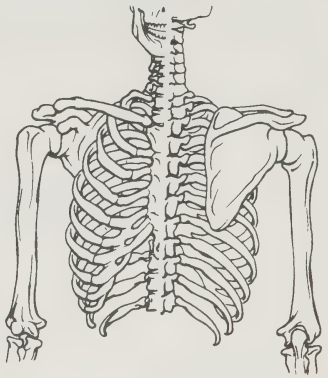
Movements	Stick Drawings	Counts	Teaching Tips

2. The Upper Body



FRONT VIEW BACK VIEW

MUSCLES



FRONT VIEW BACK VIEW

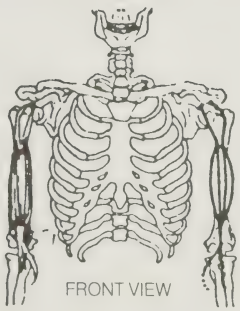
BONES AND JOINTS

Benefits of appropriate exercise design for the upper body:

- improved posture, particularly during pregnancy and with sedentary occupations
- prevention of upper and lower back pain associated with poor posture
- prevention of injury related to those sports and daily activities that stress the upper body musculature (e.g. swimming, racquet sports, baseball, snow shovelling)
- power to lift, thus minimizing stress on lower back
- feelings of general well-being about appearance

Muscles

Front View Biceps Brachii



FRONT VIEW

- a two-joint muscle (it crosses two joints) which attaches at the shoulder joint, extends down the front of the arm and attaches just below the elbow joint, both on the ulna and radius bones

How to Feel Them

- use your fingers to feel these muscles running vertically on the front of the arm above the elbow joint
- make a tight fist – bend your elbow to feel the muscle contract

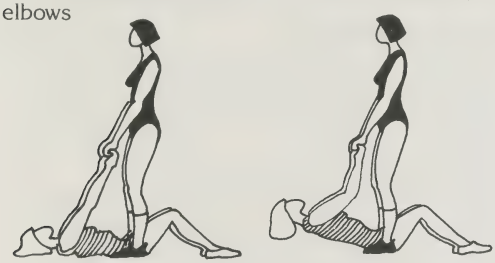
What They Do

- bend elbow (flexion)

Sample Exercises

- the biceps brachii is a difficult muscle to work effectively without weights or a chin-up bar; beginners can work it by flexing and extending the arms, as the weight of the forearm provides the work
- try the following partner exercise which stimulates a chin-up movement
- partner A lies on back with knees bent
- partner B stands over partner A in a straddle position (feet at hip height)

• partner A grabs B's finger in an underhand position
• partner A slowly raises body off floor by flexing elbows, then slowly lowers to floor by extending elbows

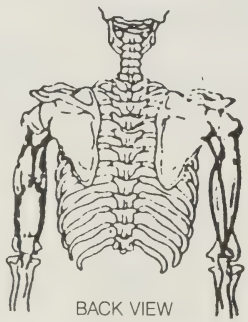


Teaching Tips

• the standing partner should keep knees slightly flexed and pelvis tilted
• the lifting partner should keep knees flexed
• emphasize regular breathing
• have participants select partners of similar size
• not recommended for a beginner class

Muscles

Back View Triceps Brachii



• has three sections, the longest segment attaching onto the scapula and the other two onto the back of the humerus (upper arm) and running down the back of the ulna (lower arm)

How to Feel Them

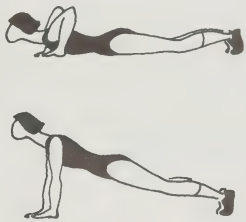
• place the fingers of one arm along the back of the opposite arm above the elbow joint
• to feel the muscle contract, straighten the elbow against resistance

What They Do

• straighten elbow (extension)

Sample Exercises

• pushups are one of the best exercises to strengthen this muscle
• full pushups:
lie on your stomach with legs straight out and toes locked under. Place hands at chest level, shoulder width apart. Slowly raise the body as a unit by extending the elbows, then slowly lower by flexing at the elbow

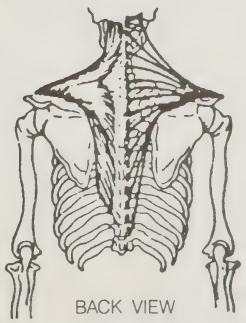


Teaching Tips

• start with knee pushups first as full pushups may be too advanced for your group
• ensure regular breathing throughout
• remind participants to tuck in abdominals and focus on keeping the back in alignment
• keep head loose
• if participants seem to be struggling and backs are starting to sag, demonstrate an easier version for them to try

Muscles

Back View Trapezius



• has four distinct sections which attach at the vertebrae from the base of the skull to about 2/3 of the way down the back

How to Feel Them

• place fingers on your upper back below one shoulder, then shrug your shoulders

What They Do

• raise shoulders (extension)
• pull head back (extension)
• raise arms away from body (shoulder abduction)

Sample Exercises

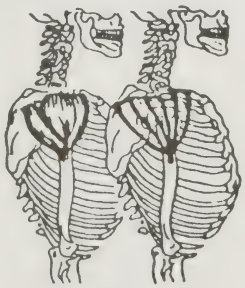
• shoulder shrugs
• flyers
lie on your stomach with arms on the floor, perpendicular to your body. Slowly raise arms. Hold to a count of four. Lower

Teaching Tips

• keep head resting on the floor to avoid back strain

Muscles

Side View Deltoid



SIDE VIEW

• has three distinct parts which lie over the shoulder joint: superior or middle, anterior deltoid and posterior deltoid. They act as a unit or separately

How to Feel Them

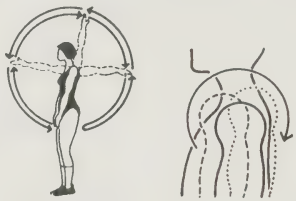
• place fingers on the front part of the shoulder and raise arm up in front (anterior)
• place fingers on the outside of the shoulder and raise arm out to the side (middle)
• place fingers behind the shoulder and raise arm behind (posterior)

What They Do

• flexion and inward rotation of shoulder
• shoulder abduction (moving away from body)
• extension and outward rotation of shoulder

Sample Exercises

• full arm circles, start with arms relaxed and slightly in front. Circle arms backwards, over head and down the back of the body. Reverse direction of circle
• shoulder rolls, start with arms at the sides perpendicular to the floor. Roll shoulders forward and backward. Repeat the same exercise but with arms in front of the body parallel to the floor

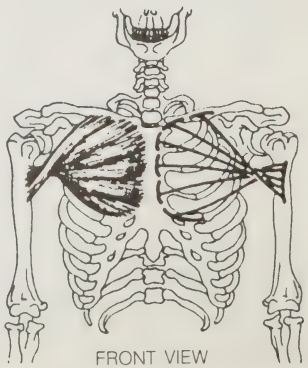


Teaching Tips

• start with arms 10% in front of the body and shoulders relaxed
• maintain pelvic tilt throughout
• note the wide variety in the degree of shoulder flexibility in your participants. Encourage them to be aware of this and to work on flexibility in this area as well as muscular development

Muscles

Front View Pectoralis Major



FRONT VIEW

• runs between the sternum (breast bone) and anterior humerus below the head

How to Feel Them

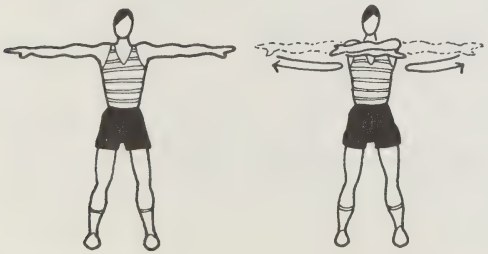
• locate by flexing and extending the shoulder with the fingers of one hand placed across the chest of that side

What They Do

• bring arms from the side and across the chest
• inward rotation of arms
• shoulder flexion
• shoulder extension

Sample Exercises

• pushups (see page 59)
• full arm circles from front to back
• arm cross-overs start with arms out to the side, parallel to the floor and feet about 18" apart. Cross arms in front of the body parallel to the floor, then return arms out to the side.

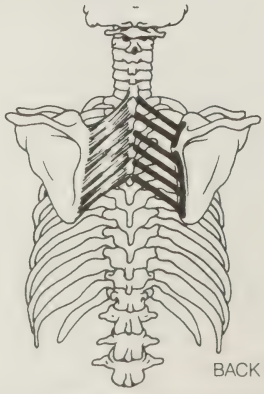


Teaching Tips

• often referred to as the "pecs"
• avoid flinging the arms

Muscles

Back View Rhomboids



• extend from the spine to the scapula on the back (shoulder blade)

How to Feel Them

• squeeze your shoulder blades together and try to place your finger tips on the rhomboids by reaching up your back

What They Do

• rotation of scapula

Sample Exercises

• full shoulder circles
• figure eights with shoulder leading
• elbow lifts from bent-over position

Teaching Tips

• make the movements slow and controlled
• ask participants to draw a figure eight as if they had chalk on their shoulder (upper arm) and were standing next to a chalk board
• do one shoulder at a time until people catch on

Designing Your Own

1. Which of these muscles are most familiar to you?

2. Why are they more familiar?

3. Which of these muscles do you want to focus on using more in your classes?

4. For the muscle(s) mentioned in #3, create an exercise design sequence that you can use in your next class. Include a minimum of three exercises or major movements in the sequence, along with the number of counts for each movement.

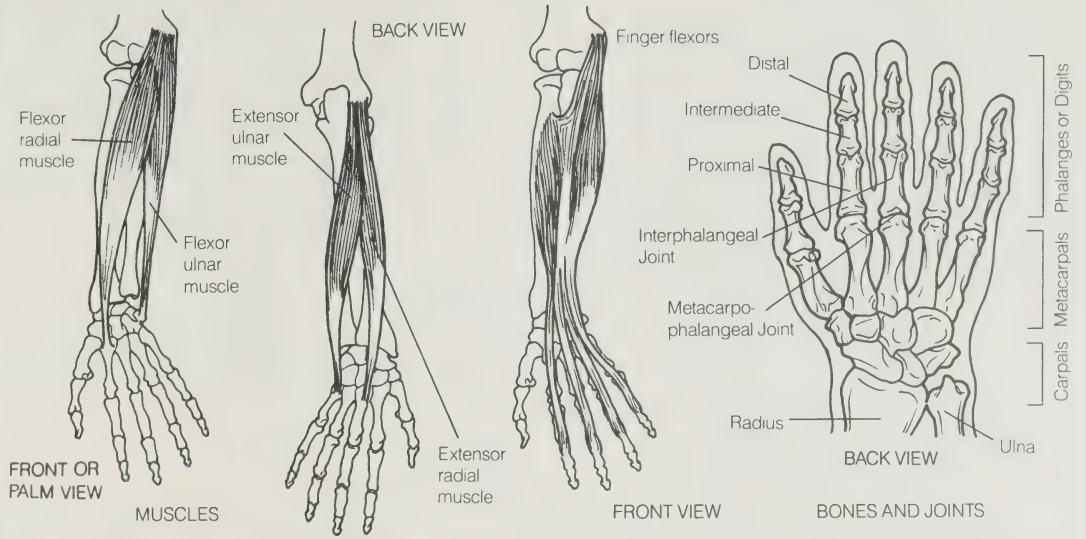
Muscles:

Purpose of the Sequence:

The Exercise Sequence:

Movements	Stick Drawings	Counts	Teaching Tips

3. The Forearm, Wrist and Hand



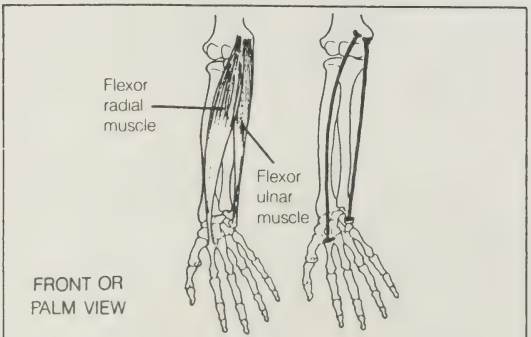
Benefits of appropriate exercise design:

- prevention of injury to elbow, forearm and wrist
- strong wrists, hands for lifting and carrying

The forearm, wrist and hand are extremely complex with 29 bones, over 25 joints and more than 30 muscles. This is only an overview, describing representative muscles and joints.

Muscles

Flexor (radial) and Flexor (ulnar)



- flexor (radial) extends from the elbow to the metacarpals of the index finger
- flexor (ulnar) extends from the elbow to the metacarpals of the little finger

How to Feel Them

- flex forearm wrist of arm with your hand in a fist. Place your fingers along the top central area of your arm (anterior surface) to feel the radial flexor and along the little finger side to feel the ulnar flexor

What They Do

- both the radial and ulnar flexors provide flexion for the wrist and the forearm

Sample Exercises

- the fist

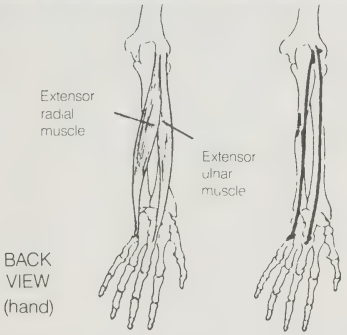
stand relaxed with feet about 18″ apart. Bend elbows, hands in fists
flex wrist two counts
extend wrist two counts
adduct wrist two counts
repeat eight counts

Teaching Tips

- have people bend their knees with the two count rhythm of this exercise
- move your arms to the rhythm too – encourage some spontaneity

Muscles

Extensor (radial) and Extensor (ulnar)



- extensor (radial) extends from the elbow to the metacarpals on the little finger
- extensor (ulnar) extends from the elbow to the metacarpals on the long, middle finger

How to Feel Them

- these two are more difficult to palpate. Try flexing your elbow and extending your wrist, tracing the muscles from the illustration to the left

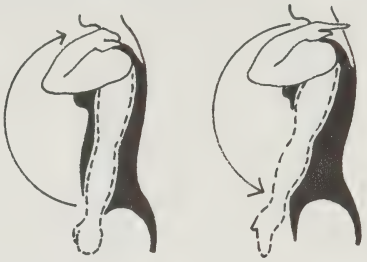
What They Do

- the radial extensor extends the wrist and forearm
- the ulnar extensor also extends the wrist and forearm and works with the flexor ulnar to adduct the wrist

Sample Exercises

- lift and lower

lift fisted hands to touch shoulders (one count). Extend open hands and lower arms to front of body (one count). Repeat eight counts

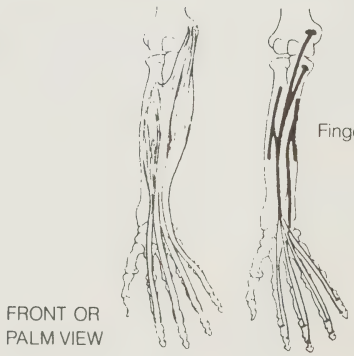


Teaching Tips

- ask people if they can feel the muscles in their arms as they do this exercise. Then pause and have people identify where they feel the muscles working

Muscles

Finger Flexors



- extends from the elbow almost to the finger tips

How to Feel Them

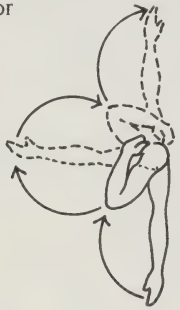
- flex your fingers, wrist and forearm and trace this muscle with your finger tips

What They Do

• flexes the fingers, the wrist and the forearm

Sample Exercises

• finger flashers:
stand relaxed with feet about 18" apart. Simply open and close hands while you flex and extend your arms; start close to the floor, using eight counts to reach full height and eight counts to return to floor



Teaching Tips

• do this one to lively music, encouraging participants to move around as they flash their fingers

CAUTION!

• exercises involving the wrist and elbow can cause problems for people with bone and joint problems such as arthritis and rheumatism. Start slowly, introducing the exercises gradually and then moving the intensity up. At the end of this section of class, extend your hands and fingers and then relax them, stretching the muscles to complete the workout

Designing Your Own

1. Which of these muscles are most familiar to you?

_____

_____

_____

_____

2. Why are they more familiar?

_____

_____

_____

_____

3. Which of these muscles do you want to focus on using more in your classes?

_____

_____

_____

_____

4. For the muscle(s) mentioned in #3, create an exercise design sequence that you can use in your next class. Include a minimum of three exercises or major movements in the sequence, along with the number of counts for each movement.

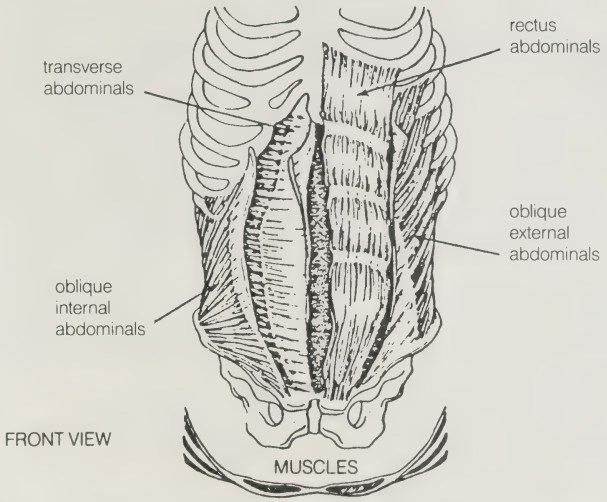
Muscle(s):

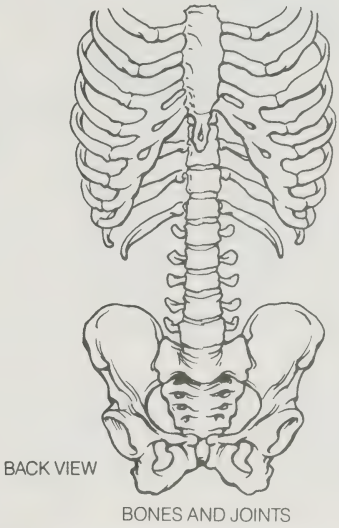
Purpose of the Sequence:

The Exercise Sequence:

Movements	Stick Drawings	Counts	Teaching Tips

4. The Abdominals

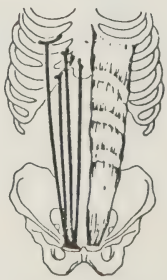




Benefits of appropriate exercise design:

- prevention of lower back pain
- adequate support of the spinal column
- power to lift and bend in work and play without worrying about strained muscles
- feelings of general well-being about appearance and posture
- comfort and safety of the lower back, especially during pregnancy and childbirth
- protection of internal organs

Muscles: Rectus Abdonminis



FRONT VIEW

- extend from the pubic bone up to the 5th., 6th., and 7th. ribs

How to Feel Them

- use your finger tips to feel these muscles running vertically up the middle of your abdomen between the rib cage and the pubic bone

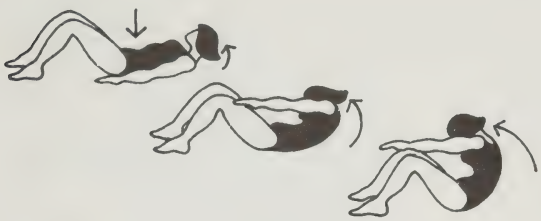
What They Do

- bend trunk forward (flexion)
- control the tilt of the pelvis and by holding the pelvis up front, flatten the lower back
- strong rectus abdominis helps make the back muscles more effective in stabilizing the spine and also enables the hip flexors to raise the legs more efficiently

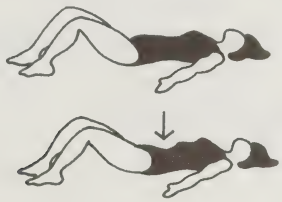
Sample Exercises

- the curl

lie on your back, knees bent, feet flat on the floor. Tilt your pelvis so that your back is flat on the floor. Curl your upper body towards your knees, chin on chest, reaching forward with your hands until you reach a sitting position (four counts). Then uncurl slowly back down to the floor



• situps
take the starting position for a "curl" and use only two counts to come to a sitting position and two more counts to return to the floor
• crunches
with hands on shoulders, lift head and bring head to knees
• static contractions
simply contract your abdominal muscles and hold the contraction for four counts while maintaining a pelvic tilt. Relax (four counts). Try these contractions throughout your day while sitting, standing, walking

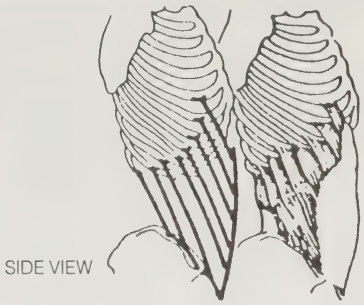


Teaching Tips

• if participants have difficulty with the pelvic tilt, or if they end up arching their backs as they start their curls or situps, ask them to tuck their heels in closer to their buttocks and to sweep their hands along the floor as they curl up, chin on chests. Emphasize tucking their heads to their armpits as they start the "sweep".
• keep this exercise for those who have mastered the "curl" and have strong backs and abdominals.
• most people will notice the rectus abdominis contracting but you will need to point out the other abdominal groups that are also working here
• keep hands on shoulders, not pulling at neck

Muscles

Oblique External (abdominals)



• extend from the lowest 8 ribs to the pubic bone

How to Feel Them

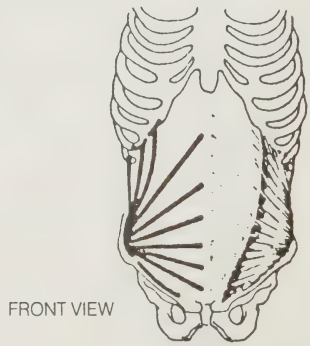
• press your finger tips on the sides of your abdomen

What They Do

• flex the trunk and twist it from side to side
• assist the rectus abdominis to maintain the proper pelvic tilt

Muscles

Oblique Internal (abdominals)



• extend from the 8th., 9th., and 10th. ribs to the pelvic bone and into the lumbar area

How to Feel Them

• these are harder to find; first relax your external oblique abdominals and try to feel the internal obliques beneath them – on the sides of your abdomen. These muscles run diagonally in the opposite direction to the external obliques

What They Do

- flex the trunk and twist it from side to side

Sample Exercises

- false starts

do a bent-knee situp to your maximum effort point. Lift one foot off the floor and touch the opposite elbow to your raised knee. Return to your starting position and repeat with the opposite knee and elbow. Other situp variations:

- touch elbows to ankles instead of knees
- clap hands while leaning L and R
- move alternate shoulders forward and backward

for eight counts while holding your maximum effort point

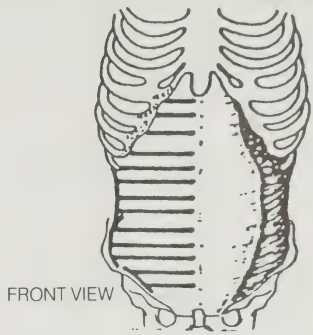
- reach both hands to R of knees while doing a "half" situp, return to floor and reach both hands to L of knees

Teaching Tips

- be sure both feet are flat on the floor
- do not come all the way up to a sitting position – just to your maximum effort point
- this is a more advanced position. Beginners can lie flat on the floor, raising one elbow to the opposite bent knee

Muscles

Transverse (abdominals)



- from crest of pubic area up to and including the area between the lower six ribs

How to Feel Them

- cannot feel with fingers

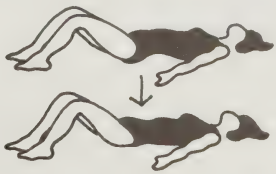
What They Do

- hold the abdomen flat (along with other abdominal muscles), thus supporting the back
- pull abdominal wall inward during forced exhalation

Sample Exercises

- pelvic tilt

lie on your back, knees bent, feet flat on the floor. Exhale as you flatten your entire back against the floor. Hold the contraction for four counts while breathing regularly. Relax, allowing your back to lift slightly. Repeat six times



- pullback

in a standing position, contract the abdominal muscles so that they pull back towards the spinal column. Hold for four counts. Release. Repeat

• Graham contractions

lie on your back on the floor, arms at your sides, feet together. Inhale as you move your hands along the floor and overhead (four counts). Exhale as you return your arms to your sides, hands flexed at the wrists, feet flexed and together. At the same time, lift your head off the floor and look at your feet. Hold the contraction for four counts

Teaching Tips

- exhale as you contract your abdominal muscles
- are backs firmly feeling the floor?
- work towards a strong and complete exhalation
- if participants have weak lower backs, try this one with knees bent

CAUTION!

- there is no such thing as a bad exercise or a bad direction of movement for the back, but there are some exercises that could be performed with more care than others[26]
- remember, the facets like to be moved in ALL directions, and to move them completely through their full and normal range means that they are properly nourished. Certain principles should be followed in all back exercises:

1. Sudden ballistic movements which thrust the body with full force to its extreme range can cause sprains and strains.
2. Many exercises can be done more safely from the lying position, especially the forward flexion ones such as situps or curl-ups. Doing a forward bend from the standing position causes the great weight of the overhanging upper trunk to act as a lever against the low back. The stresses on the discs and facets can be extreme.
3. Some suggested stretches for the back before you exercise: remember variety is important.

1. Flatten lower back 2 times, 10 seconds each. 2. 3 times, 5 seconds each

3. 2 times, 5 seconds each 4. 30 seconds each side

Why Exercise for the Back?

The prime purpose of back fitness is to nourish all the little facet joints. Exercise strengthens the joint cartilage and makes it thicker and more durable. It also increases the stabilizing effects of the adjoining muscles, ligaments and tendons. The healthy joint which can move smoothly through its normal range without excess shear, wobble or strain will last a long time.

In a weak back, the support structures are unable to move the back through its normal range of motion without transmitting much of the strain through the facet joints. When the weak muscles, ligaments and tendons cannot support their share of the load, the facet joints, already weak with a thinner fragile cartilage lining, are very vulnerable to breakdown.

Aging, as such, does not cause joint cartilage to degenerate; it is rather misuse, disuse, and/or laziness which are the real culprits.

Designing Your Own

1. Which of these muscles are most familiar to you?

_____

_____

_____

2. Why are they more familiar?

_____

_____

_____

3. Which of these muscles do you want to focus on using more in your classes?

_____

_____

_____

4. For the muscle(s) mentioned in #3, create a "stretching" exercise design sequence that you can use in your next class. Include a minimum of three exercises or major movements in the sequence, along with the number of counts for each movement.

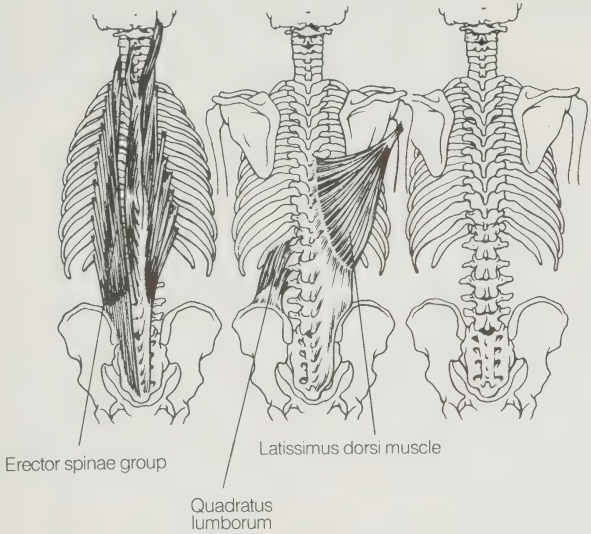
Muscle(s):

Purpose of the Sequence:

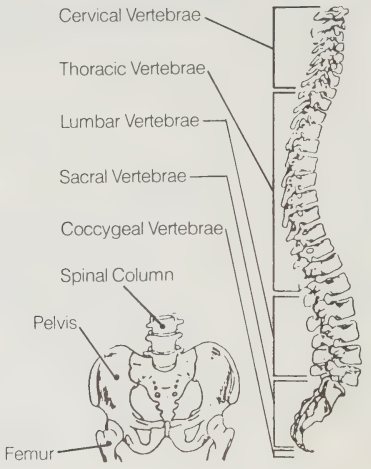
The Exercise Sequence:

Movements	Stick Drawings	Counts	Teaching Tips

5. The Back and Spine



MUSCLES
BACK VIEW



Lateral view of the spine,
anterior view of the spine and pelvis

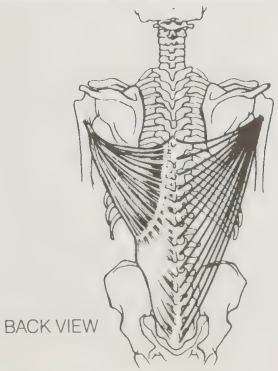
BONES AND JOINTS

Benefits of appropriate exercise design:

- improved posture and support for the ribs and chest
- strong back and neck muscles for lifting

Muscles

Latissimus Dorsi



- extends from the back of the pelvis up the back to the shoulders, wrapping around the ribs.

How to Feel Them

- reach around the front of your body with L arm while R arm is extended to the side. Clench your fist and lift and lower your extended arm. Reach L hand beyond your ribs, under your arm

What They Do

- lowers arms extended at sides
- draws the shoulders down in a shrug
- brings arms from front to sides
- rotates arms and shoulders inward/downward

Sample Exercises

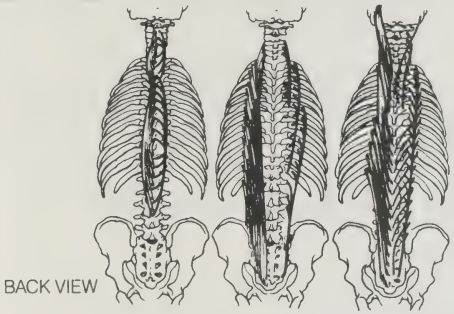
- shoulder shrugs and pull downs
- various arm lifts and circles
- exercises in which the arms are pulled down such as canoeing, rowing

Teaching Tips

- use steady pressure against the downward pull to work this muscle well; partner exercises work well here, e.g. hands working in opposite directions
- maintain a pelvic tilt

Muscles

Erector Spinae



• extend the full length of the spine on both sides

How to Feel Them

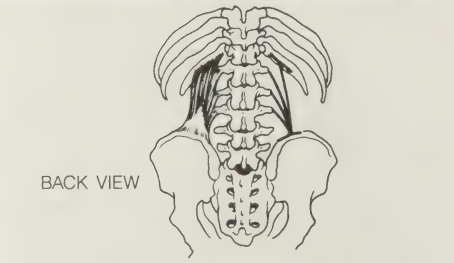
• the erector spinae muscles refer to a large number of muscles that help keep the spine erect. They run the full length of the spine and you can feel them by probing your fingers into your lower back area on either side of your spine

What They Do

• extend the spine and tilt the head backward
• the erector spinae work best when the pelvis is tilted as this improves body alignment and ensures a "tall" stance

Muscles

Quadratus Lumborum



• extends from the pelvic girdle to the vertebrae of the lumbar region of the lower back and the last rib

How to Feel Them

• with great difficulty!

What They Do

• extend the lower back against gravity when both sides are used
• help in lateral flexion (sideways movement) when one side is used

Sample Exercises

hip isolations

• stand relaxed, hands at sides, knees bent slightly
• move hips forward, then into neutral position, then back, then neutral position, then to L, neutral, to R. Repeat
• rotate hips in both directions in large circles

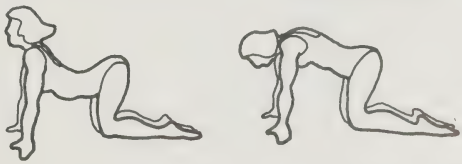
Teaching Tips

• remember to keep the knees bent as this will extend your range of motion
• keep all movements smooth and controlled
• be careful not to hyperextend the spine when moving the hips back

CAUTION!

• hyperextension of the lower back area can strain and damage the spine. Strong abdominal muscles help protect the lower back

Instead of a cat stretch with hyperextension



Teach "up hard", "down easy"; no stretch on the arch; move into a "flat" back, not a hollow back. Let the muscles relax and "settle" down into a released position.

Instead of a cobra with hyperextension

Teach a gentle lift, with the bottom of the rib cage held on the floor. Use your arms to hold your upper body weight

CAUTION!

• avoid leaning great distances from side to side when your arms are extended overhead. This gives too much work to the Quadratus Lumborum and can result in a painful lower back area. Instead, keep one arm bent, e.g. with hand on the hip
• when working in a diagonal position, keep your pelvis tilted at all times
• use care when changing body position from the side to flat back

Designing Your Own

1. Which of these muscles are most familiar to you?

_____

_____

_____

2. Why are they more familiar?

_____

_____

_____

3. Which of these muscles do you want to focus on using more in your classes?

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4. For the muscle(s) mentioned in #3, create an exercise design sequence that you can use in your next class. Include a minimum of three exercises or major movements in the sequence, along with the number of counts for each movement.

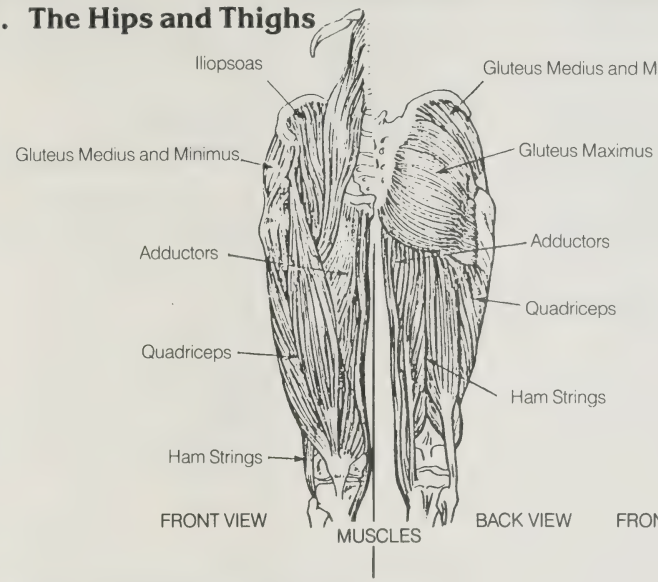
Muscle(s):

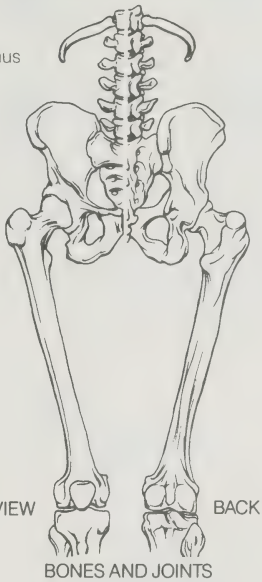
Purpose of the Sequence:

The Exercise Sequence:

Movements	Stick Drawings	Counts	Teaching Tips

6. The Hips and Thighs



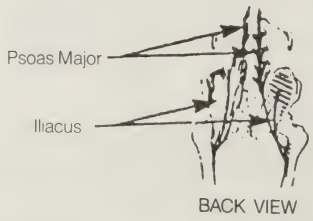


Benefits of appropriate exercise design:

- prevention of sports related injuries to the knee joint
- prevention of injuries resulting from muscle strength imbalances, in particular the quadriceps and hamstrings – a common problem in runners
- power to lift using the thigh muscles, thus minimizing stress on the lower back
- posture control
- positive image about physical appearance

Muscles

Iliopsoas



- comprised of the Psoas Major and Iliacus
- attaches at the lumbar spine area, crosses the front to attach to the hip bone

How to Feel Them

- while standing, place fingers to one side of the pubic area, then lift one leg out in front

What They Do

- hip flexion
- outward rotation of the thigh
- hyperextension of the lower back when femur is stabilized

Sample Exercises

- knee to elbow touch

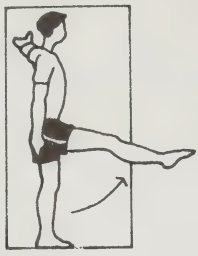
from a standing position; raise one knee to touch the elbow of the same side

- standing leg raises

using one hand on wall for support; lift and lower outside leg straight in front

- cycling

on floor, balancing on hips with hands at your sides, simulate a cycling action with the legs



• stair climbing, jogging, knees-up running
Note: most exercises which strengthen the iliopsoas also work on the quadriceps

Teaching Tips

• ensure that the iliopsoas is well stretched before doing any of these exercises
• keep inside leg bent slightly to minimize stress on lower back
• round back and shoulders and tuck chin in to avoid neck hyperextension
• keep abdominals tight (pelvic tilt)
• to reduce the load, try cycling with your upper body up and leaning on elbows or with hands under hips

Muscles

Quadriceps

FRONT VIEW

• this muscle group comprises the Vastus Lateralis, Vastus Intermedius, Vastus Medialis and Rectus Femoris
• a two-joint muscle which attaches at the hip and knee joints
• lies directly over the front thigh bone (femur)

How to Feel Them

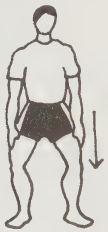
• seated on a chair, place one hand on the front of one thigh, then straighten lower limb of same thigh

What They Do

• straightens (extension) leg at knee
• bends thigh (flexion) at hip

Sample Exercises

• half knee bends with legs shoulder width apart, bend knees and straighten



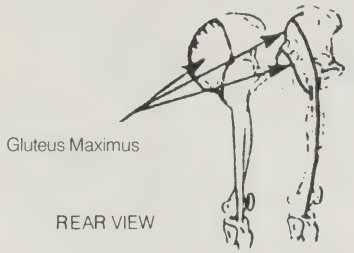
• modified wall leg raises
side facing a wall with the outside leg straight up in front, bend knee, straighten leg, then lower to start position

Teaching Tips

• watch that hips don't drop lower than knees. Keep a minimum 90 degree angle at the knees; heels on floor
• keep inside leg slightly bent to maintain a pelvic tilt
• which muscles are acting as stabilizers?

Muscles

Gluteus Maximus



- large muscle comprising the buttocks

How to Feel Them

- place one hand on a buttock, then tense that buttock, or bend knee and swing the knee back

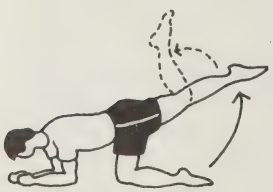
What They Do

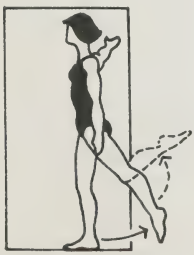
- hip extension
- outward rotation of the thigh

Sample Exercises

- rear leg lifts

from the "all fours" position, elbows on floor, lift one leg behind parallel to the body, bend knee, and lift heel towards ceiling





- the same exercise as above can be done standing, side facing the wall for support lift outside leg behind, then lower
- "penny pincher"

lying on your stomach, squeeze your gluteals tightly as if trying to support a coin between your buttocks

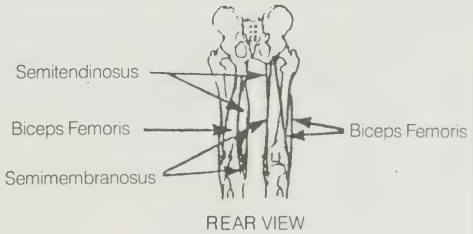
Note: The exercises described under Gluteus Maximus also strengthen the hamstrings

Teaching Tips

- keep the tummy tucked in to support the spine
- encourage a relaxed neck
- keep the inside leg slightly bent and maintain a pelvic tilt position
- encourage a controlled leg lift as opposed to a ballistic swinging movement
- keep head flat on the floor to minimize low back strain

Muscles

Hamstrings



- this muscle group comprises the Biceps Femoris, Semitendinosus and Semimembranosus
- accounts for the majority of muscle mass in the rear thigh
- a two-joint muscle attaching at the base of the pelvis, running down the back of the thigh and attaching on the inner and outer aspects of the knee

How to Feel Them

- place one hand on your rear thigh and lift that leg behind you, bending your knee

What They Do

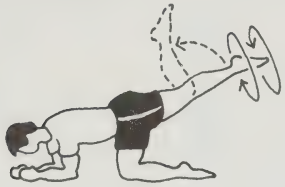
- thigh extension at the hip when knee is fixed
- leg flexion at the knee
- inward rotation of the thigh except the Biceps Femoris which is responsible for outward rotation

Sample Exercise

- leg circles

from an "all fours" position, extend one leg behind parallel to the floor and circle leg both clockwise and counter-clockwise (also works gluteus maximus). Flex and extend the leg

- in flexed position, push the foot towards the ceiling

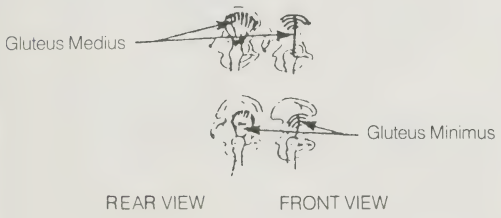


Teaching Tip

- keep abdominals pulled in
- are the arms straight or is the arm opposite to the circling leg bent as the overload increases?
- which muscles are acting as stabilizers to keep the body centred?
- try this one leaning on your forearms

Muscles

Gluteus Medius and Gluteus Minimus



- located on the side directly over the hip joint

How to Feel Them

- from a standing position, place fingers of one hand just below the hip bone – lift leg to the side and lower

What They Do

- abduction (away from the body) of the thigh at the hip
- outward rotation of the thigh as it abducts

Sample Exercises

- leg lifts

with one side facing a wall, slowly raise the outside leg out to the side, then lower

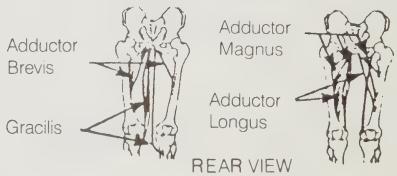
- lying on side, arms bent, neck relaxed, body weight forward, abdominals tight lift and lower top leg. Repeat on the other side

Teaching Tips

- keep inside leg slightly bent
- think "buttocks" – do you notice them contracting and releasing?
- bottom leg may be bent for support
- body may be slightly bent at waist

Muscles

Adductors



- this muscle group comprises the Adductor Longus, Adductor Brevis, Adductor Magnus and the Gracilis
- attach at the pubis and extend down the inner thigh and attach above the knee joint, except the Gracilis which attaches below the knee joint thereby functioning at both the hip and knee

How to Feel Them

- seated, place your hands between your thighs, then squeeze thighs together

What They Do

- thigh adduction (towards the body) at the hip
- inward rotation of the thigh as it adducts (except the Adductor Longus)
- the Gracilis is also involved in leg flexion at the knee and outward rotation of the thigh

Sample Exercises

- seated, one leg extended, one leg bent. Turn toe out, lifting and lowering the straight leg, flexing and extending the foot

• inner leg raises
from a side lying position, place the foot of the top leg beside and in front of the knee of the bottom leg; lift and lower inner thigh

Teaching Tips

• keep neck relaxed, arms bent and supporting the upper body
• adjust upper body position to adjust the level of intensity, e.g. keep head rested on the floor with a low level group and bottom arm fully extended with a more advanced group
• is the body centred or is your body slumped backwards?
• the foot can also be placed behind the knee which might be better for people with large thighs

CAUTION!

• too many leg lifts or too much running may cause overuse aches and pains in the hip area. Keep the number of sets and repetitions appropriate to the group you are working with; check with them regularly prior to starting class to see if anyone is sore or uncomfortable.
• avoid deep knee bends; make them 1/4 bends, emphasizing that knees should be placed over toes. Ask people to look down when they are standing straight and doing partial knee bends (pliés); if they can see their feet, then their alignment is off and they should readjust their feet so that they are under their knees.
• teach participants the value of strong quadriceps in preventing lower back strain. Encourage them to bend and lift things using their quads instead of their lower backs.
• always do stretching exercises for an area after you have worked it.

Designing Your Own

1. Which of these muscles are most familiar to you?

_____
_____
_____
_____

2. Why are they more familiar?

_____
_____
_____
_____

3. Which of these muscles do you want to focus on using more in your classes?

_____
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_____

4. For the muscle(s) mentioned in #3, create an exercise design sequence that you can use in your next class. Include a minimum of three exercises or major movements in the sequence, along with the number of counts for each movement.

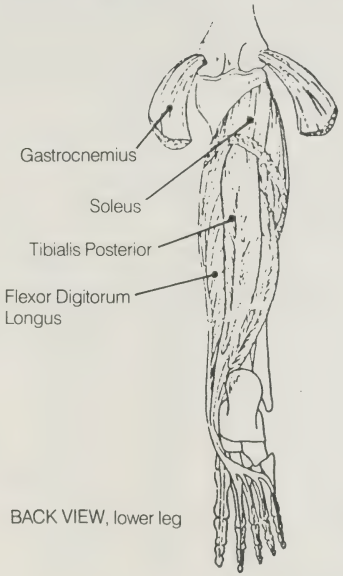
Muscle(s):

Purpose of the Sequence:

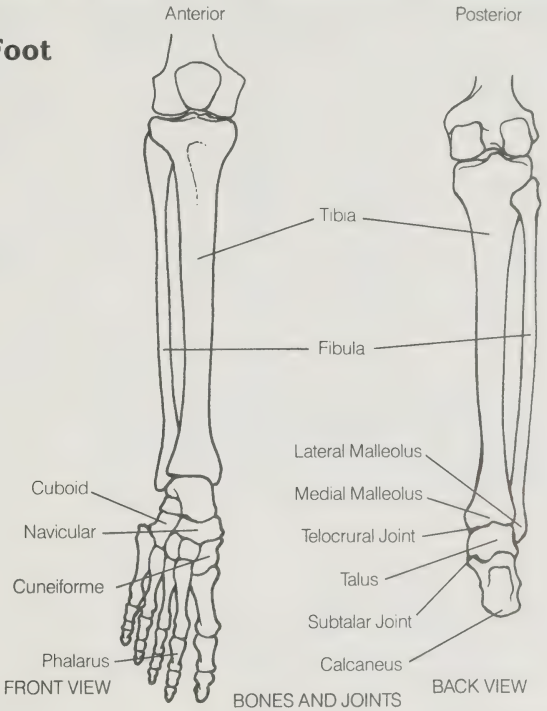
The Exercise Sequence:

Movements	Stick Drawings	Counts	Teaching Tips

7. The Lower Leg, Ankle and Foot



MUSCLES



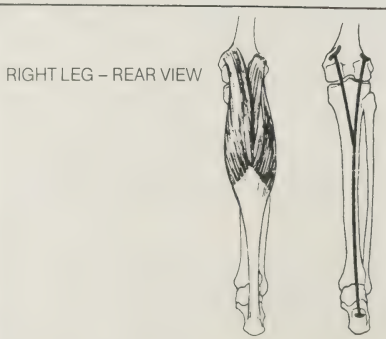
BONES AND JOINTS

Benefits of appropriate exercise design:

- prevention of a variety of problems associated with this area such as shin splints, sore heels, tight calves, weak ankles, weak foot arches
- correction of underuse problems from lack of exercise
- maintenance of strong and flexible lower legs for daily life

Muscles

Gastrocnemius



- extends from the back of the knee to the heel – commonly called the calf muscle; a two-joint muscle

How to Feel Them

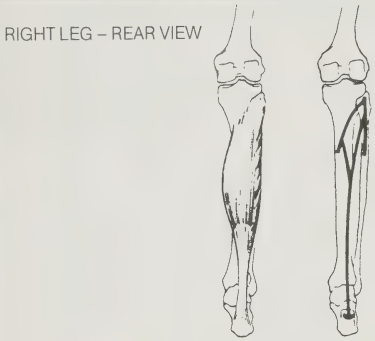
- point your toe and then grab your calf with your hand; use your fingers to feel the outline of the muscle and its two heads

What They Do

- moves the sole of the foot downward (plantar flexion) when power is required, as in jumping
- flexes the leg at the knee

Muscles

Soleus



• extends from the back of the knee to the ankle joint and works closely with the Gastrocnemius; a one-joint muscle

How to Feel Them

• it is located under the gastrocnemius muscle on the side of the lower leg. When you stand on your toes, you can see it plainly on the outside of your lower leg if your legs are well exercised

What They Do

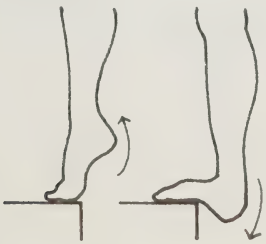
• flexes the foot downward (plantar flexion) as in walking

Sample Exercises

• most movements using the legs will exercise these two muscles, e.g. jumping, walking, jogging, tennis, dance. If the knee is flexed, the gastrocnemius doesn't work much; instead the soleus does most of the work

• standing with legs straight and rising onto the toes works the gastroc, and the other foot flexor muscles

• stand with your heels hanging over the edge of some stairs. Lift and lower your body by lifting and lowering your heels



Teaching Tips

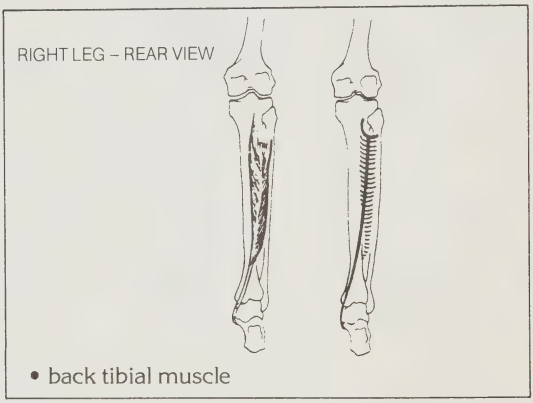
• stretch the calf area thoroughly prior to conditioning these muscles

• encourage runners/joggers/class members to pause and stretch slowly and carefully if they feel their calves tightening

• encourage "no bounce" aerobic movements to prevent tight calves

Muscles

Tibialis Posterior



• back tibial muscle

How to Feel Them

• too difficult to palpate (without surgery!)

What They Do

• moves sole of foot inward

• assists in moving the sole of the foot downward

• when this muscle is torn from its origin and the surfaces of the tibia and fibula, the injury is referred to as "shin splints" (often other injuries can also cause "shin splints" e.g. tearing of connective tissue from the tibia and fibula).

Sample Exercises

• sitting down, turn the sole of the foot inward repeatedly

• sitting down, roll onto your toes while turning the soles of your feet inward

• calf stretch

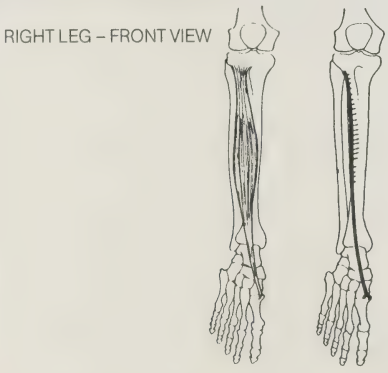
stand 10-12" away from a wall and lean on it with your forearms and head resting on your hands. Bring one leg closer to the wall and bend the knee. Bend the back leg at the knee. Keep the foot flat, toes pointed straight ahead. Remember to keep the heel of the back foot flat on the floor. Slowly move your hips forward, keeping your lower back straight. Hold the stretch for 10-15 seconds for each leg

Teaching Tips

- aim for an easy stretch in your calf muscle – don't overstretch
- bend the knee and rotate the ankle to stretch the soleus

Muscles

Tibialis Anterior



- extends from just below the knee to the inside of the foot at the base of the large toe

How to Feel Them

- this is the first muscle you can feel on the lateral (outside) side of the tibia

What They Do

- moves the top of the foot towards the shin (dorsal flexion)

Sample Exercises

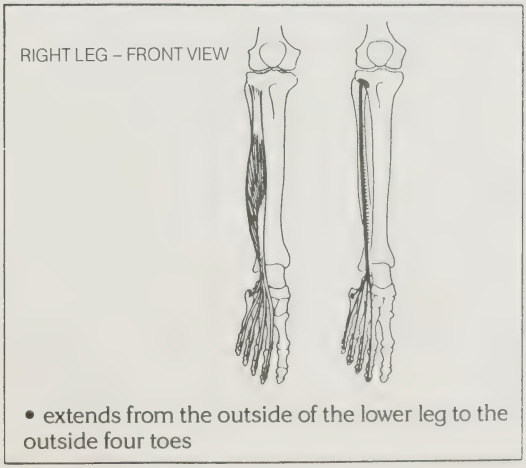
- walking barefoot in sand, tapping the toes repeatedly, skating, are all good exercises for this muscle
- pointing the toes and flexing the feet towards the shins is also excellent; foot circles with good flexion will also work this area.

Teaching Tips

- recommend dorsal flexion exercises to women who wear high heels so that they can work at retaining stretched calves
- these exercises are also excellent for preventing shin splints and an imbalance of the foreleg muscles

Muscles

Extensor Digitorum Longus



- extends from the outside of the lower leg to the outside four toes

How to Feel Them

- this is the second muscle you can feel on the lateral side (outside side) of the tibia

What They Do

- moves the top of the foot towards the shin (dorsal flexion)
- turns the sole outward when weight is on the inner edge of the foot
- if this muscle is well exercised it maintains a balance between the plantar and dorsal flexors

Sample Exercises

• sit in a comfortable position on the floor or in a chair. Place the sole of your L foot on top of your R foot. Press your L foot down as you lift your R foot up. Hold for four counts. Reverse feet

CAUTION!

• proper warmup, including light locomotor activity and then stretching exercises are important as forerunners prior to doing extensive work involving the muscles and joints in the lower leg. Problems such as shin splints where the anterior and posterior tibial muscles are involved, or sore heels due to torn muscle fascia (plantar fasciitis) can almost all be prevented through proper warmup activities and a reduction of high impact aerobics.

• encourage your participants to wear appropriate shoes while exercising. Problems like black nail, fallen arches, hammer toes and even sprained ankles can result from poorly fitting or worn-out shoes. Be prepared to discuss what kind of footwear to wear for what kind of physical activity; injuries can also happen because people wear their sailing shoes to their aerobic classes.

• check the floors you are working out on: if they are cement, you may end up with lower leg problems due to the impact. Look for cracks, holes for equipment (e.g. volleyball stanchions) and any other irregularities that might cause problems in a fitness class.

Designing Your Own

1. Which of these muscles are most familiar to you?

2. Why are they more familiar?

3. Which of these muscles do you want to focus on using more in your classes?

4. For the muscle(s) mentioned in #3, create a stretching exercise design sequence that you can use in your next class. Include a minimum of three exercises or major movements in the sequence, along with the number of counts for each movement.

Muscle(s):

Purpose of the Sequence:

The Exercise Sequence:

Movements	Stick Drawings	Counts	Teaching Tips

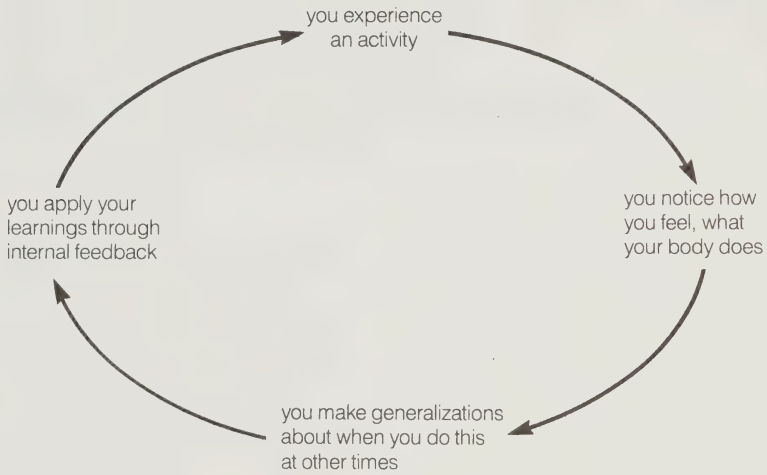
V. Movement Analysis

Anatomy provides the theoretical basis for the practical applications of exercise design and movement analysis. Body awareness is one of the potential results of understanding and analyzing movement.

1. Body Awareness

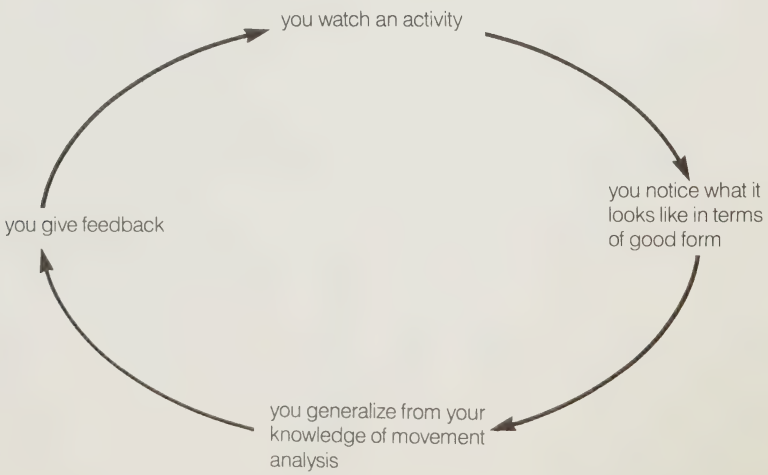
Becoming more aware of bodies and how they move involves participation as a leader from two points of view – as a participant and an observer. As a participant, you attend to practising movements and noticing how you feel, as described earlier in the experiential learning cycle. This involves internal feedback that you integrate into your own understandings about movement.

As a Participant



From the second point of view, when you are observing others, you watch someone experience an activity; you think about what it looks like to you; you generalize from what you know about movement analysis and then you give feedback to help that person apply your comments.

As an Observer



To become adept in the area of body awareness leaders need to develop their abilities to be Participant/Observers. These stances work together closely in the sensitive leader; as you learn to listen carefully to your own body you become more adept at giving feedback to others.

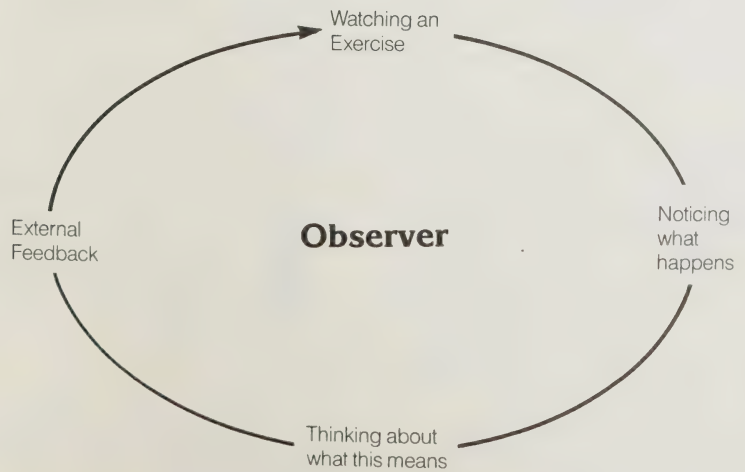
In addition to practising the participant-observer stance, informed leaders understand some basic principles about how to analyze movement. There are many principles related to movement analysis; the three that follow are basic to fitness leadership.

2. The Three Principles

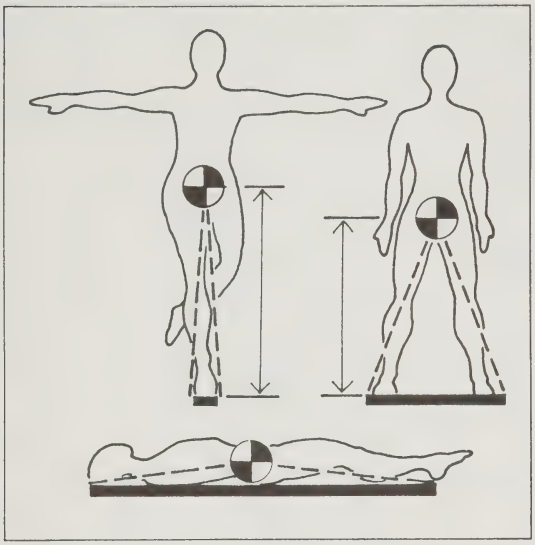
Principle #1: Use an appropriate base of support and centre of gravity to encourage stability.

Your base of support is what connects you to the floor. Standing with your feet 18" apart provides a more stable base than with your feet together. When your body weight – your centre of gravity – is positioned over your base of support, then you are described as being balanced.

Lying on your back on the floor with your pelvis tilted is more stable than standing with your feet 18" apart. This is true because:



• your pelvis or centre of gravity is closer to the floor
• your base of support (your back) is larger than your feet.



Thus in giving feedback to participants who seem to have trouble with balance, look for two things:

• is the base of support (usually feet/legs) large enough?
• is the centre of gravity (pelvis) low enough to the floor?

How could you use this principle to make a basic exercise more difficult?

_____

_____

_____

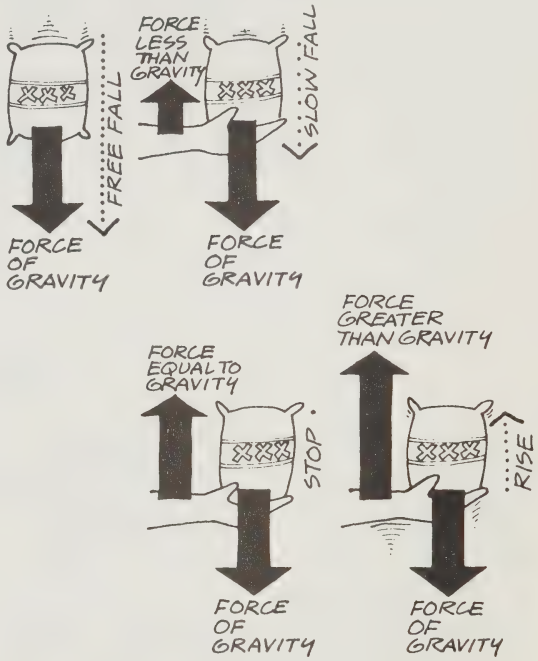
_____

Principle #2: Use gravity to increase or decrease the degree of difficulty in exercises.

Gravity is the force that keeps things and people firmly on earth. When you reach for and lower a 10 pound bag of flour from a high cupboard to a countertop, your arm muscles prevent the flour from falling down – they contract and resist the force of gravity applied on the flour. Similarly, when you lower yourself into a chair (↓) gravity works with you; when you get up out of a chair (↑) you need stronger muscles to fight the force of gravity.

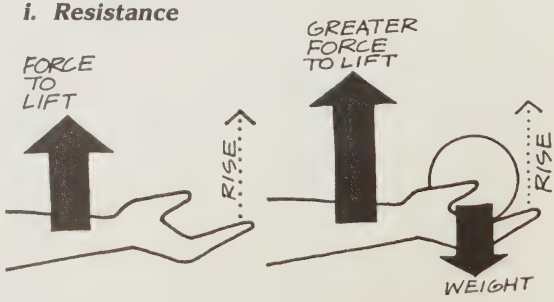
If you apply this to an exercise program you realize that our bodies need strong anti-gravity muscles to lift loads against this force that keeps us down. For example – stair walking takes a lot of energy because our front thigh muscles must lift our entire bodies against the force of gravity.

• lifting your empty arm/hand up takes more energy than dropping it.
• collapsing your body in a heap on the floor takes less energy than lifting it up into a stretch.



Principle #3: Use adjustments to resistance, speed, and distance JR (joint-resistance) to increase or decrease the degree of difficulty in an exercise.

i. Resistance



If you adjust the amount of resistance in a movement you can increase/decrease the degree of difficulty. Add five pound weights to each hand prior

to arm circles and you increase the resistance. Lose 20 pounds and you will decrease the resistance of your legs to leg lifts. Add a partner who pushes down on your arms while you lift up and you increase resistance.

What other ways can you think of for playing with resistance in your classes?

_____

_____

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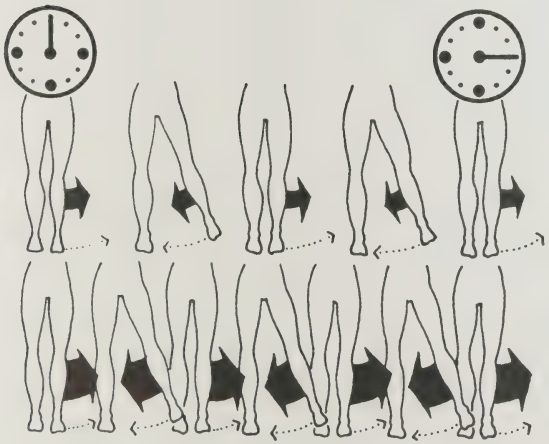
_____

ii. Speed



Depending on the particular exercise involved, you can increase the degree of difficulty by slowing down or speeding up e.g. pushups, side leg lifts. Which of the above side leg lifts would be most difficult?

_____

Why? _____

Give a few more examples of how you could adjust the degree of difficulty of an exercise by playing with speed:

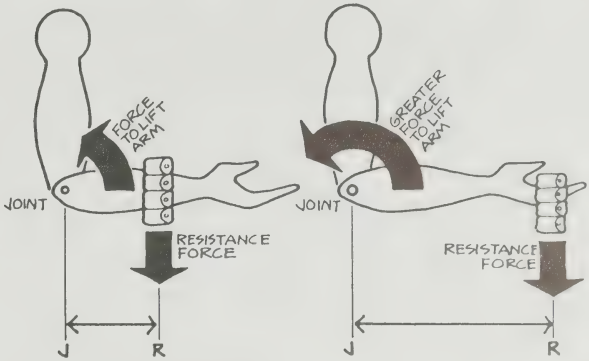
_____

_____

_____

_____

iii. Distance JR



This refers to the distance between the **J**-joint you are working and the **R**-resistance to the movement.

The longer the distance JR, the greater the range of motion. For example, you can make much larger circles with lateral arm circles than you can with shoulder circles, and picking up a box of groceries with your arms straight out in front of you is more difficult than with your arms bent.

The longer the distance JR, the greater the degree of difficulty to the exercise. For example in situps, you are working the hips, abdominals, and lower back and the resistance comes from lifting the upper body. Thus if you hold your arms across your abdomen you will find it easier than if you hold your arms over your head. The latter movement increases the distance between the J – lower back and the R – upper body by extending the arms overhead.

How would this principle apply to pushups?

_____

_____

_____

_____

When you have a general understanding of the anatomical tools you work with as a fitness leader, the next step is to investigate internal anatomy – the support systems that adapt as you exercise.

References for Unit Three:

[17] For more comprehensive information related to anatomy, physiology and movement analysis, see the FOLP Specialties Manual, **Exercise Design.**

[18] Ibid. Re the nervous system.

[19] Adapted from: **Illustrated Physiology**, by Ann McNaught and Robin Callendar, Churchill Livingstone, Medical Division of Longman Canada Ltd., 1975, page 261.

[20] Adapted from: **It's Your Body** by Lawrence M. Elson, McGraw Hill, New York, 1975.

[21] Werthner, Penny. "Stretch", in **Fitness Leader.** Volume 1, #10, June 1983, page 130. For a full description of this type of stretching see Laurence E. Holt's "Scientific Stretching for Sport".

[22] Lindsey, Ruth, Billie Jones, Ada Van Whitley. **Body Mechanics.** Third Edition. Wm. C. Brown Co. Publishers, Dubuque, Iowa, 1974, pages 9-14. The descriptions of the Postural Problems and some of the Exercise Suggestions are adapted from this book.

[23] See the FOLP Specialties Manual: **Dance** for more information on shock ABSORPTION.

[24] From: **The FitKit** Clarke, Irwin & Co. Ltd.

[25] Much of the information in this section on "Exercise Design" was adapted from two excellent resources for further study:
i. Donnelly, Joseph E. **Living Anatomy**. Champaign, Illinois: Human Kinetics Publishers, 1982.
ii. Thompson, Clem W. **Manual of Structural Kinesiology.** C.V. Mosby Co., Eighth Edition, 1977.
In addition, three sections have been adapted from issues of the journal **Fitness Leader:** "Exercise Design – Your Abdominals" (February '84) by Dorothy Strachan and "Exercise Design – Your Upper Body" (April '84) and "Your Hips and Thighs" (September '84) both of which were written by Veronica Marsden. Pitters Publishing, Ottawa, Ontario.

[26] Allen, Dr. Murray. "How to Cope With Low Back Pain" in **SportMedInfo** from the Sport Medicine Council of Canada, Vol. 4, No. 3, March 1985. Adapted.

Unit Four:
Basics About Physiology

I. The Cardiovascular System

II. Energy Production

III. The Respiratory System

IV. Digestion/Nutrition/Metabolism

Unit Four:
Basics About Physiology

Physiology describes how our internal anatomy operates under various conditions. Understanding how the body's internal support systems adapt to exercise provides fitness leaders with a wealth of information about how to provide effective and safe classes.

The support systems that provide energy to muscle cells can be trained to respond quickly so that you can make additional demands on your body without becoming unduly fatigued.

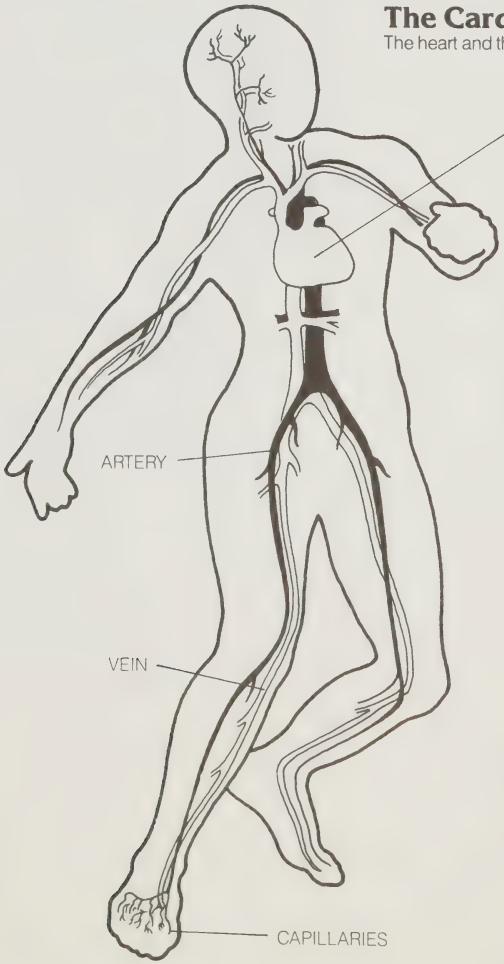
Even at rest, energy is continually being used to support basic body processes. The energy in the form of ATP must continually be regenerated. The body's mechanism for doing this is through aerobic metabolism where oxygen and fuel (fats, carbohydrates) are introduced into the muscle cell and combusted. Combustion (oxidation) involves a series of chemical reactions that break the more complex fuels down into simpler products (water, carbon dioxide) and in the process ATP and heat are produced. In many ways, support systems can be thought of as performing three major functions. These include:

- the exchange of gases (oxygen and carbon dioxide) between the atmosphere and the cell
- the elimination of heat from the cell
- the delivery of fuels to the cell (fats, carbohydrates)

This Unit looks at these support systems – the cardiovascular system, the respiratory system, energy production and nutrition/digestion/metabolism.

The Cardiovascular System[19]

The heart and the circulatory system.



HEART
"Pump" which drives –

BLOOD
a complex fluid containing food materials, respiratory gases, waste products, protective and regulating chemical substances round–

BLOOD VESSELS
a closed system of tubes:

ARTERIES
from the "pump" to the tissues of the body:

↓ branch into

CAPILLARIES
where the interchange of gases, food and waste substances occurs.

↓ reunite to form

VEINS
from the tissues of the body back to the "pump"

I. The Cardiovascular System

Think of the cells of your body as factories.[27] These factories are in business to make a product – energy. Like any other factories, they require raw materials in order to make the product; they need a transportation system that will deliver the raw materials; and they also need a waste disposal system that will get rid of any undesirable by-products. In the real world, this usually means that a factory has to do business with several other companies. In the body, the **heart** does this work. It pumps blood, which supplies the oxygen and fuel to the factory cells so that the blood can haul away the polluted waste material that accumulates at the cells. Without the heart, the blood couldn't do its job of feeding, and carrying waste from the billions of cells which make up all our body tissues.

The cardiovascular system can really be divided into four functionally different parts:

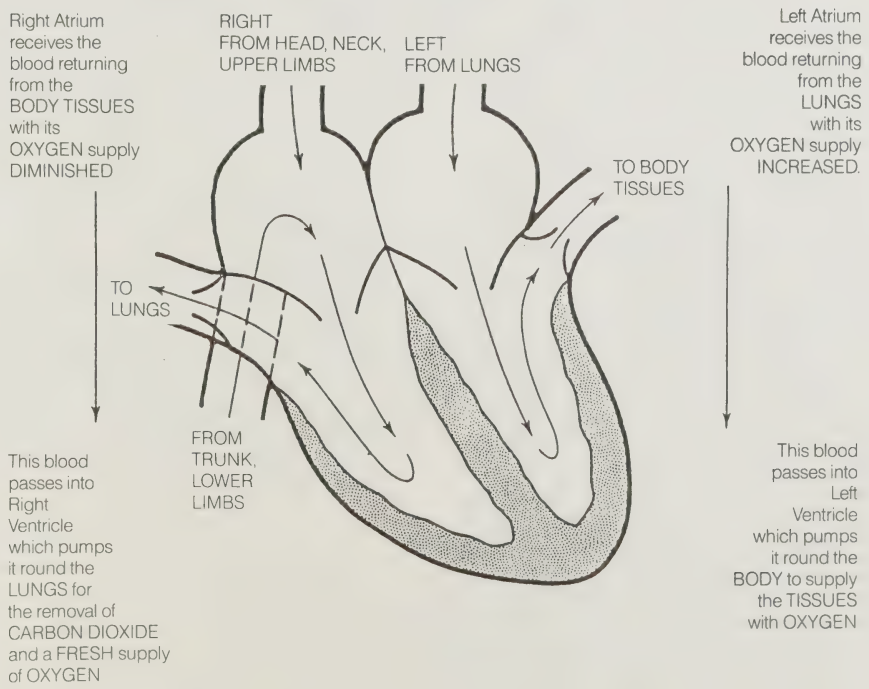
1. The Pumping Organ: The Heart

The pumping organ, the heart, is actually two separate pumps, one of which propels blood through the lungs and the other through the rest of the body. These two systems have been referred to as the pulmonary circulation and the systemic circulation.

The Heart[19]

The human heart is really a DOUBLE PUMP

This diagram simplifies the structure of the heart to make it easier to understand the function of its various parts.



2. The Conducting and Distributing Vessels: The Arteries

The conducting and distributing vessels are the arteries and arterioles. The arteries split into many branches, each progressively smaller than the parent stem, and distribute to the various regions of the body. The walls of arteries are thick and elastic. It is this property that enables them to expand to accommodate the volume of blood expelled in surges from the heart. During relaxation of the heart, the elastic recoil of the artery forces the blood forward providing a continuous flow to the tissue beds. The arterioles give rise to even smaller vessels, the capillaries, which exist in countless numbers in practically every tissue of the body.

3. The Exchange Vessels: The Capillaries

The large number of capillaries provide a large area for blood flow leading to a reduction in the rate of flow when the blood reaches the tissues. This fact combined with the very thin walls, enables the capillaries to act as the site of exchange of substances between the blood and the tissues. Functionally, they have been referred to as exchange vessels.

4. The Collection System: The Veins

After the blood has flowed through the arterial network and the capillaries, a system must be available for collection prior to beginning the journey back to the heart. This task has been assigned to the venous system. In the veins, the muscle and elastic tissue are less well developed enabling the veins to act as a reservoir. One-way valves prevent the back-flow of blood into the capillaries.

5. Blood Transport: Blood Pressure

The major means of transport within the cardiovascular system is the blood. In the adult the total blood volume ranges between four to five litres, not a large quantity for the thousands of miles of supply lines that extend throughout the body. The requirements of the cells are met by having the blood make continuous and frequent "round trips" dropping off its cargo at one site, loading up at another site and returning with fresh supplies. (Your total blood volume makes the "round trip" in one minute when you are at rest). Blood Pressure: Pressure is needed to force the blood through the circulatory system. Blood, like any other fluid, flows from an area of high pressure to one of low pressure. For example, blood flows from the left ventricle of the heart into the aorta because when the ventricle contracts it exerts a pressure that is higher than that in the aorta. Similarly, blood flows from the aorta through the remaining systemic blood vessels and back to the heart because of the pressure difference.

The pressure inside the arterial system is very much related to the volume of blood. During the contraction of the heart, blood is pumped out into the arterial system, greatly increasing the volume. An increase in pressure results and the highest pressure attained has been defined as the systolic pressure. During relaxation of the heart blood flows out through the capillaries and the lowest pressure that occurs is referred to as the diastolic pressure. These two pressures vary from one individual to another and they are strongly affected by physical and emotional factors.

In our society, there is an incidence of people who have been diagnosed as having high blood pressure or "hypertension"; i.e. a pressure that is outside of what would be considered normal. Although there are many schools of thought, 150 represents the highest level of systolic pressure that is considered normal and 95 the highest diastolic. Health authorities are generally concerned because a large percentage of high blood pressure cases go undetected. Over time elevated blood pressure can lead to degenerative changes in the heart and blood vessels. The increased work that the heart must perform increases the oxygen requirements of the heart and may lead to a heart attack. Unfortunately, the cause of high blood pressure is often unknown, making treatment very difficult. Fitness leaders can watch for overly flushed faces, dizziness and frequent nausea as in-class signs of elevated blood pressure.

During exercise, the major function of the cardiovascular system is to deliver blood to the active tissues in accordance with their needs for oxygen and nutrients and elimination of heat and waste products. The contraction of small muscle groups causes little change in the overall circulation. However, as more and more muscles become active, the demand for blood to these regions greatly increases.

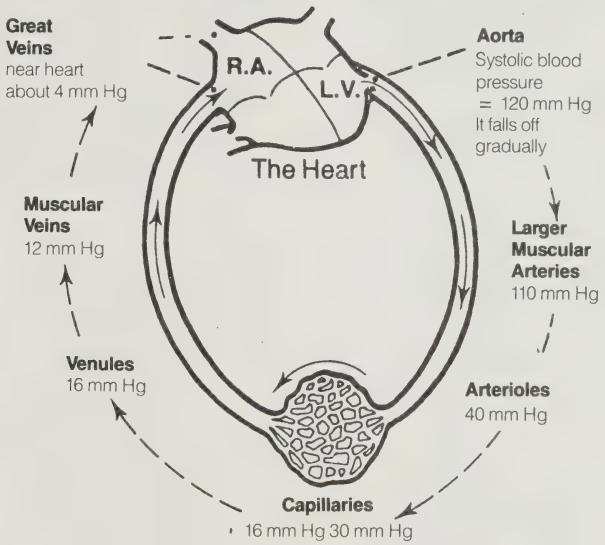
Systemic blood pressure

Blood pressure is highest at the height of the heart's contraction, i.e. SYSTOLIC BLOOD PRESSURE, and lowest when the heart is relaxing. i.e. DIASTOLIC BLOOD PRESSURE.

The pressure is LOWEST as blood drains into RIGHT ATRIUM.

The pressure is HIGHEST as blood leaves the LEFT VENTRICLE

Arterial system



Pressure is always lower as the heart relaxes. e.g. 80 mm Hg

Most of the Energy imparted to Blood by Heart's Contraction has been spent by the time the Blood reaches the venous side of circulation

Type	Cardio-vascular	Muscular Endurance	Muscular Strength	Flexibility	Balance and Coordination
Frequency	Minimum: 3x Recommended: daily	alternate days daily	alternate days	alternate days daily	alternate days daily
Intensity	Heart Rate: Min. 170-age Max. 200-age	Light load of many repetitions (10-20)	Heavy load fewer repetitions (1-8)	Gradually pressing in a stable position	simple tasks initially with a gradually increasing degree of difficulty
Time	Min: 6 minutes Recom. 15 + minutes	3-6 sets sufficient recovery to complete desired # of reps. designed for next set	• rest interval of 2 minutes between sets (each unit of repetitions) • usually do 3 sets • rest can consist of changing to another muscle group rather than complete inactivity	minimum 10 seconds - 30 or more	10 minutes 20 minutes

6. Tips for Leaders

Tip: Remember the "FITT" formula when you are thinking about general guidelines for your workouts.

F - Frequency	• how often you do an activity e.g. 3 to 5 days per week
I - Intensity	• how hard you should participate e.g. 60% to 90% of heart rate or 50 to 85% of maximum oxygen uptake
T - Time	• how long you should do an activity e.g. 15 to 60 minutes of continuous aerobic activity
T - Type	• the kind of activity you select e.g. any activity that uses large muscle groups, that can be maintained continuously

The adaptability of the body is based on the principle of overload and recovery. Each component of fitness responds to this principle and your improvement will be obvious if you train the components or types of activity according to the previous FITT principle. The following chart provides some general guidelines for training the components of fitness.

Tip: At a given work load, the older individual generally attains approximately the same heart rate and cardiac output as the younger one. The maximal aerobic power, maximal cardiac output and maximal heart rate, however, decline as we grow older. Average maximal heart rate is 190 to 200 beats per minute in a normal 25 year old male subject and declines to between 166 to 170 beats per minute at the age of 65 years. For females, heart rates are, on the average, several beats higher. Understanding the effect of aging is critical to the individual prescription of exercise. Prescribing similar exercises to young and old individuals will lead to wide differences in the stress imposed. Exercises are best individualized by prescribing on the basis of a percentage of the maximal heart rate that can be attained for a given age.

(e.g. men: 220 - age x 65-85%
women: 225 - age x 65-85%)

Tip: A proper warmup reduces risk to the heart. It has been found that the adjustment in blood flow to the heart does not respond properly if heavy exercise is started too soon. A longer warmup period is appropriate for older individuals and for those who have been less active or who are recovering from illness. A gradual increase in the number of muscles used and the intensity or pace demands less pumping work by the heart muscle and allows effective blood flow to both the other working muscles and the heart itself.

Tip: A progressive warmdown is similarly important following heavy exercise. Heavy exercise should never be stopped abruptly. Large amounts of blood can remain pooled in the working muscles greatly reducing the flow of blood to the heart if contraction is not continued at progressively reduced levels. Walk around after aerobic exercise as your heart rate slows down.

Tip: You can adjust the FITT Principle depending on your goals as a leader.

e.g. for weight control:
F • 4-6x week
I • lower limit only; 60% max.
T • 30-60 minutes
T • walking, swimming; alternate weight bearing and weight supported if very overweight

e.g. for stress management:
F • 4x week
I • moderate
T • 45-60
T • dance, sport etc.

e.g. for cardiovascular fitness:
F • 3x week
I • 60-90% max.
T • 15-20 minutes in training zone
T • jogging, cycling

Tip: Emotion can strongly affect blood pressure and the normal adjustment to exercise. In individuals who are particularly intense or feeling chronically fatigued, caution should be used in recommending a "normal" program of activities. A reduced program of low level activity is often more desirable.

Tip: Atherosclerosis is a disease that causes plaque to build up on the walls of the arteries. It usually becomes pronounced with advancing age. In some individuals, the coronary arteries may be so affected that exercise causes a certain degree of discomfort in the chest and

left arm. If there is any sign of an exercise-induced pain in the chest and/or radiation of the pain down the shoulder, neck, arm or hand in any individual, that person should stop exercising and get immediate medical attention. In fact, an exercise stress test is often recommended for those who are over thirty-five years of age and have been generally inactive prior to beginning a fitness program.

Tip: During muscle contraction, elevated amounts of heat are produced and it becomes more of a challenge for the body to rid itself of the excess heat. A principal method by which we lose heat during exercise is by redistribution of blood flow to the skin. The blood is able to accommodate large amounts of heat and then lose it in sweat as the blood is directed close to the surface of the body. Increased amounts of sweating occur and evaporation of the sweat results in cooling. The cooled blood then returns to the warmer interior and the cycle is repeated. If your exercise environment is too warm and humid, then it is more difficult for evaporation to occur. The effect is that more and more blood must be shunted to the skin in an attempt to unload the increasing quantity of heat. If this evaporation cannot take place, then a progressive increase in body temperature occurs. **Can you imagine how plastic pants and other "faddish" workout clothes can forcibly raise body temperatures to unsafe levels?**

Tip: Encourage participants to drink small amounts of water during exercise according to how thirsty they are. The most serious consequence of profuse sweating is a loss of body water. Because significant amounts of this body water come from the blood volume, the decrease in blood volume increases the circulatory strain making it more difficult for the heart to deliver the required amount of blood. **Drinking water at intervals during exercise can prevent this strain on the heart.**

Tip: When a person is exercising at a good level for a long period of time when the temperature is elevated, as might occur during the summer months, the strain on the cardiovascular system becomes even more severe. This is particularly true in individuals who are overweight. The thickness of fat acts as insulation and makes it difficult for the heat to escape. Similarly, in older individuals who are particularly unfit, heat tolerance is reduced and the sweating response is delayed, making it more difficult to maintain a stable temperature. Under these conditions, the exercise intensity should be considerably reduced and include frequent rest stops. Proper clothing is also essential; light and loose fitting clothing encourages evaporation and cooling.

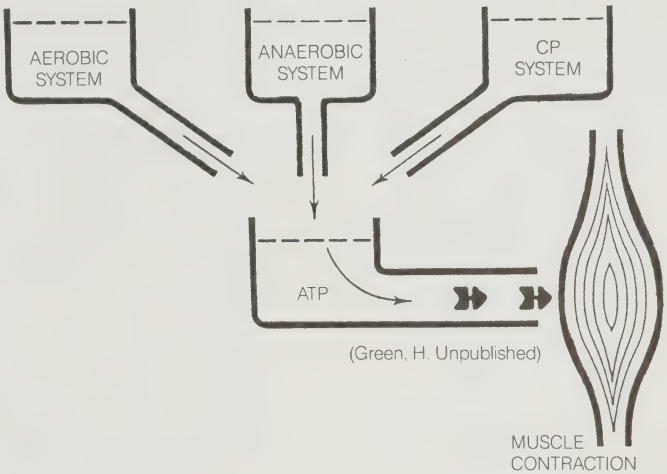
Tip: Although the cardiovascular system cannot come under conscious control during the exercise state, healthy individuals will mostly always show a proper adjustment if they stay within general guidelines such as target heart rate. Rhythmic muscular activity involving the large muscle groups is the best way to challenge the heart. During activity of this nature, the regular contraction of the arm or leg muscles compresses blood in the venous system and forces it back to fill the heart before the next contraction. Activities which involve a sustained contraction as might occur during snow shovelling, **isometrics** or during medicine ball type activities should be closely scrutinized. In this type of activity, the return of blood flow to the heart might be impeded because of the large pressures created in the chest and abdominal areas.[28]

The cardiovascular system works very closely with the muscular system to produce energy – the subject of the next section.

II. Energy Production

The muscle fibre is a collection of cells and like all the cells of the body, it has certain requirements if it is to function properly. One requirement relates to its ability to produce energy. A lot of energy is consumed during muscle contraction. The energy for this contraction comes from a series of chemical

Sources of Production of ATP for Muscle Contraction



For muscles to contract, energy is needed. This energy comes from the breakdown of a chemical compound (ATP) which contains a lot of energy. ATP is supplied by the three systems indicated above.

reactions involving the breakdown of different fuels.

When the muscle is stimulated to contract, it needs a ready source of energy to supply its immediate requirements. This energy is supplied by the breakdown of a substance known as ATP (adenosine triphosphate). Much like the stored energy in a battery, only a small supply of ATP is available in the muscle for "start-up". Consequently, a continual re-charging of ATP is needed if the muscle is to continue contracting.

Since muscles are capable of a great deal of speed and power and they can be activated within a few hundredths of a second, they need very quick ways to produce the required ATP.

There are three systems that participate in the production of ATP and each system has its own unique features and potential for energy production:

1. CP system – "creatine phosphate" – CP is contained in the muscle and is most important during the first few seconds of muscle contraction.

2. Anaerobic system – in the anaerobic production of energy, oxygen is not used. Fuels (carbohydrates) are only partially combusted or broken down and the end product is lactic acid. The term anaerobic means without oxygen.

3. Aerobic system – regeneration of ATP by the aerobic system is important during muscle contraction carried out for a longer period of time and at a low intensity. The fuels used in this pathway consist of both fat and carbohydrate (blood glucose and muscle glycogen). When these "fuels" are combusted in the presence of oxygen (aerobic), ATP is produced and water and carbon dioxide are formed as the waste products. The term aerobic means with oxygen. The longer that work is continued, the more important the aerobic component becomes.

Each of these pathways replace ATP in a different manner and each has a different potential for ATP production. The specific importance of each system depends on the intensity and the duration of work: the CP system is only significant during the first few seconds of heavy work; the anaerobic and aerobic systems provide their most significant contribution beyond this time. If the work is heavy, the anaerobic system supplies a substantial portion of the ATP. As oxygen becomes available to the cell, the aerobic system increases its contribution. In low intensity activity (walking, jogging) carried on for a prolonged time, the aerobic system is the only significant supplier of ATP.

Aerobic power or **maximal oxygen uptake is the largest amount of oxygen that the body can utilize during heavy work.** It is a measure of the body's ability to produce energy by aerobic processes. The most profound physiological change that occurs in response to regular physical activity is an increase in maximal cardiac output and maximal aerobic power.

4. Tips for Leaders

Tip: The amount of energy that can be produced by the anaerobic system is limited by the production of lactic acid. The muscles and blood can only tolerate a certain amount of lactic acid; when your lactic acid levels are getting too high, breathing is laboured, muscles feel very tired and heavy and you feel that you have to stop. When you notice this happening in participants, encourage them to slow down, to walk for awhile until their bodies catch up to their intentions. These slower activities help remove lactic acid from the blood and muscles.

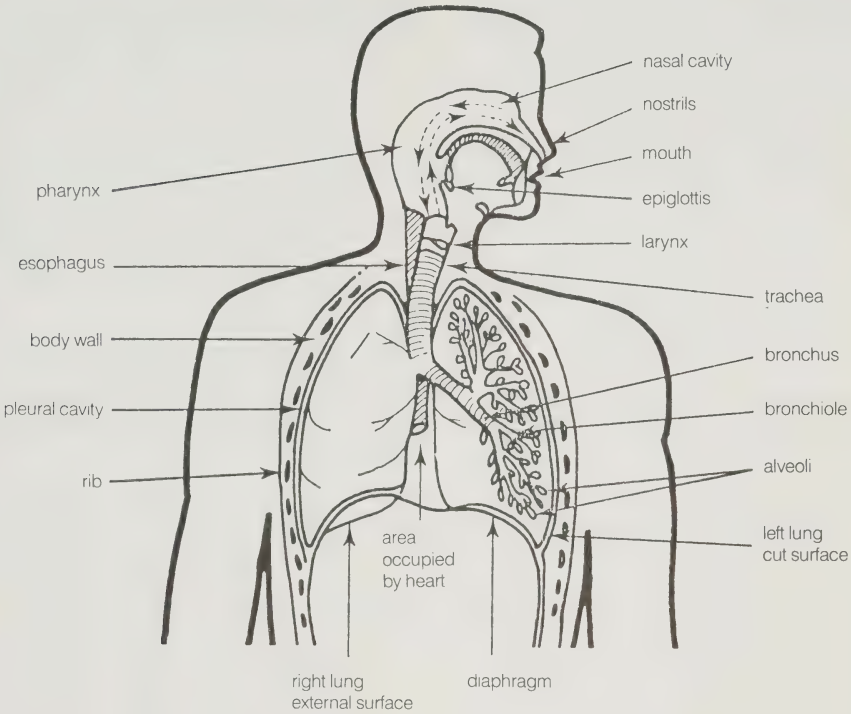
Tip: To encourage the use of the aerobic system, keep large muscle group activities at a low to medium intensity. The longer you continue activities at this level, the more fat you burn.

Tip: Begin all your exercise classes with a progressive warmup for all the major muscle groups of the body. Avoid rapid and forceful contractions early in the class, as well as relays and games that demand rapid movements.

Tip: Endurance activities that include running, bouncing and jumping cause more debilitating injuries than those which maintain closer contact with the ground. Encourage beginners to start with walking and jogging-type movements and to leave running and jumping to those with more experience and higher fitness levels.

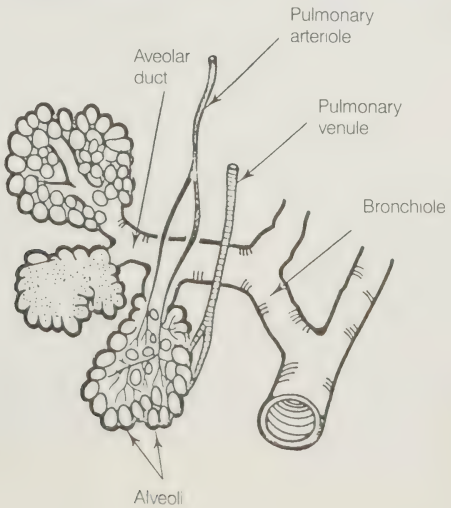
The next section describes the respiratory system – the transport of O_2 and CO_2.

The Respiratory System[29]



The very thin walls of the alveoli allow easy passage of the oxygen into the blood.

Exchange of Gases in Alveoli[29]



III. Respiratory System

1. Oxygen and Carbon Dioxide Transport

Oxygen and carbon dioxide transport is at the centre of the respiratory system. The body is liberally supplied with reserves of energy furnishing fuels such as carbohydrates, fats and to a lesser extent, proteins. But is has very little storage capability for oxygen. The oxygen must be furnished from the environment (where it exists as a component of the composition of air) and then delivered to the cells.

The delivery of oxygen to the muscle cell involves:

- the movement of air into the lungs
- the diffusion of oxygen into the blood passing by the lungs
- the transport of oxygen (in blood) to a receiving tank (the left ventricle)
- the ejection of the blood into the arterial circulation by the left ventricle
- the routing of the blood, via the capillaries, to the active blood cell. At the muscle cell, the oxygen must diffuse out of the blood into the interior of the muscle cell

The transport of carbon dioxide is essentially the reverse of this process:

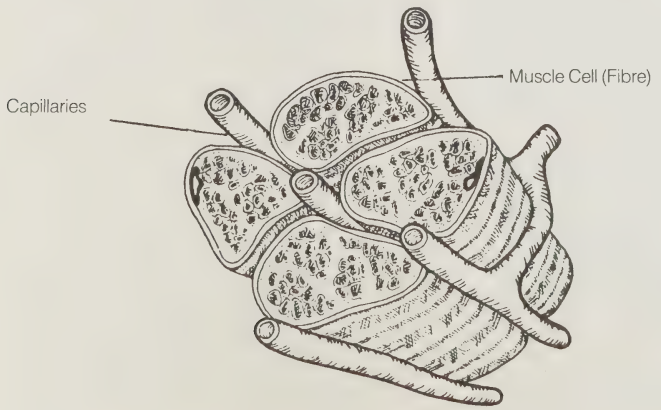
- carbon dioxide is picked up by the blood from the cell and carried back to the right atrium
- from the right atrium, the blood travels to the right ventricle where it is ejected and circulated through the lung
- at the lung, the carbon dioxide diffuses out of the circulation into the lungs
- then it is expelled into the atmosphere

2. Pulmonary Ventilation

The process of moving air in and out of the lungs is called pulmonary (i.e. lung) ventilation. Air is allowed to enter the lungs through a series of tubes that form a tract into the tiny air sacs of the lungs where the gas is exchanged into the blood. Air entering through the mouth or nose passes down the pharynx (throat) and trachea (windpipe). Beyond the trachea, the track divides into the bronchi (2 branches of the trachea) and then further subdivides into many small tubes supplying all regions of the two lungs. The lungs themselves are really composed of millions of little balloon-like air sacs (alveoli) surrounded by tiny blood vessels.

3. Diffusion of Oxygen from the Alveoli into the Blood

The next step in the transport of oxygen to the tissues is **diffusion** of oxygen from the alveoli into the blood. A remarkable pigment, hemoglobin, contained in the red cells of the blood has the ability to latch onto oxygen and hold it until delivery to the cells. Blood entering the lung is lower in oxygen and higher in carbon dioxide than the blood leaving the lung since it is returning from the working cells. If the ventilation has been adequate, the oxygen quickly diffuses through the alveolar membrane through the blood vessels and attaches onto the hemoglobin in the red cell. Similarly, carbon dioxide moves in the opposite direction because the concentration is lower in the alveoli. This process is precisely controlled so that the blood leaving the lung is virtually completely saturated, meaning all of the sites on the hemoglobin have been loaded with oxygen.



4. Exchange of CO_2 and O_2 at the Tissues

The next process in respiration involves the unloading of oxygen at the tissues and the loading of carbon dioxide for the return journey to the lung. In the case of muscle (such as the thigh muscle) which utilizes much of the oxygen during contraction, a rich capillary supply surrounds each muscle fibre. At the muscle level, oxygen diffuses from the red blood cell through the capillary membrane into the muscle cell and to the site in the muscle cell where it is used. The transport of carbon dioxide from the cell is essentially the reverse of this.

5. Tips for Leaders

Tip: Underventilation in the Inactive or Overweight – Normally, the ventilation (breathing) is closely related to the needs of the body during exercise and little conscious concern needs to be given to altering breathing patterns. However, in adults who have been inactive for many years or those who have gained considerable weight, there may be a tendency to underventilate. This may be particularly so in situations where the movement of the rib cage and diaphragm are prevented due to upper body activity. e.g. holding your breath during pushups. In such cases, remind participants to make a conscious effort to increase the depth of each breath.

Tip: Exercise Monitoring Through Breathing Patterns – The ventilatory (breathing) pattern can also provide a good method of monitoring the intensity of the exercise. If the exercise is too intense, participants will start to breathe hard. As was previously described, this is due to an insufficient amount of oxygen reaching the muscle cell, forcing a certain dependency on anaerobic metabolism. Individuals who are advancing in age and who are unfit should not work beyond their thresholds.

As leaders, it is important to encourage your participants to be aware of their breathing patterns: The "talk test" in jogging, which encourages people to maintain an activity load which will allow them to chat easily as they move along, is an example of one way to monitor breathing patterns.

Tip: Aging and Loss of Elasticity in Lung – With aging, there is a loss of elasticity in the lung. The effect is that it takes a greater amount of work by the respiratory muscle to exchange the air. The tendency is to reduce the depth of breathing. A better and more efficient exchange of air will occur if you encourage deeper, slower breathing patterns.

Tip: Resistance to Breathing During Exercise – It is very common during exercise for the participants to experience an increased resistance to breathing. This is especially so in people who have allergies. If the airway is narowed at the bronchioles, this reduces the area for gas flow, and greatly increases the work of breathing while exercising. Individuals who suffer considerable discomfort should be referred to their physicians. For those who only experience mild discomfort, a very gradual warmup is necessary prior to undertaking any vigorous activity.

A similar situation may also exist in those who smoke. Encourage participants not to smoke one hour prior to and one hour following the exercise class. In fact, smoking is one of the major risk factors of coronary heart disease and all participants would do well to refrain completely. A long term effect of regular smoking is a deterioration and loss of elasticity in the alveoli of the lung. An individual who has any degree of this type of disease will find it very difficult to exercise at any intensity because it is almost impossible for a sufficient amount of oxygen to diffuse into the blood.

Tip: Stitch in Side – Frequently, participants will experience a rather severe sharp pain on the lower aspects of the stomach wall. This pain is called a "stitch" in the side and is thought to occur due to a lack of blood flow and oxygen to the respiratory muscles. Usually, this may be avoided by a gradual warmup. If it does occur suggest that the participant reduce the exercise intensity temporarily.

Tip: Anemia – Another condition which can reduce the amount of oxygen carried by the blood is anemia. In this condition, the hemoglobin level in the blood dips below normal. A common type of anemia can result from a diet deficient in iron-rich foods, such as meat. During the exercise state, anemic individuals will appear listless and will tire

easily. It is often wise for an adult entering an exercise program to have a blood test. Where there is a serious anemia, the individual should not be allowed to exercise until the condition has improved.

Tip: Breath Holding – Participants will sometimes hold their breath while exercising and often will not be aware of doing so. This can also reduce the amount of oxygen to the tissues and cause a rise in blood pressure. In some exercises, such as weight-training, it is appropriate to exhale when the effort is being made. However, a general rule of thumb is to encourage people to breathe steadily, adjusting their breathing rhythm to body needs.

In summary, the respiratory system has the responsibility of exchanging gas between the atmosphere and the lung, and loading and unloading the gas between blood and lung and the muscle and blood. All of these processes have a large reserve. When the demands for oxygen increase during the exercise state, they respond very effectively in the healthy individual.

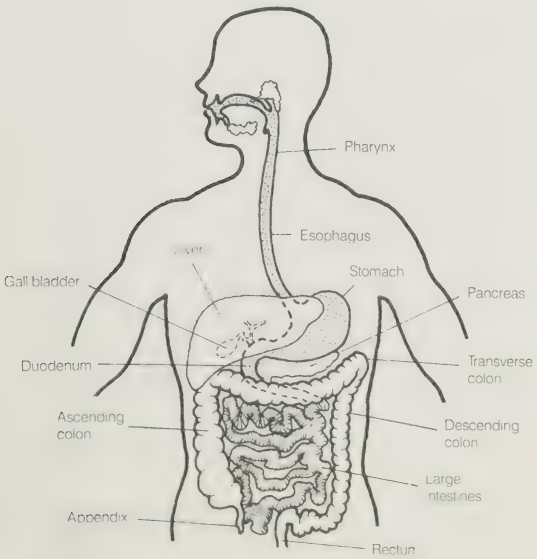
The next section describes the role of Nutrition/Digestion/Metabolism in supporting the requirements of the cells to survive and continue functioning.

IV. Digestion/Nutrition/Metabolism

1. Digestion

- The cell requires a number of different nutrients or foodstuffs to perform its many and varied functions.
- The digestive system has been given the task of transferring food and water from the external environment to the internal where it distributes food and water to the cells of the body by the circulatory system.
- The fluid portion of blood, called plasma, is a yellowish solution containing over 90 percent water and a host of other dissolved substances are the nutrients used by the cell: glucose, fats and amino acids.
- The digestive system includes the gastrointestinal tract (mouth, esophagus, stomach, small and large intestines), salivary glands and parts of the liver and kidney.
- The organs of this system provide the pipeline and all of the necessary structures for breaking down the large food particles into simpler ones for absorption into the blood, for storage and conversion into directly utilizable fuels by the cells, and for filtration and elimination of wastes.
- In order to provide the proper building material and supplies for our cells, it is essential that the necessary **nutritional** elements be included in our daily diet.

The Digestive System



2. Nutrition

There are four major nutritional elements: protein, minerals and vitamins, fats and carbohydrates and water.

i. Protein

Next to water protein is the most abundant material in the human body. It is present in a wide range of tissues such as muscle, bone, connective tissue, skin and blood. Not all proteins are identical. Their function depends upon the type of building blocks or amino acids that are present. Certain of these amino acids can be made by the body whereas others must come from dietary sources. Meat, fish, eggs and cheese contain excellent sources of dietary protein.

ii. Minerals and Vitamins

Minerals and vitamins are both necessary for the maintenance of body structures and for a variety of chemical reactions that occur in the body. In all there are about 20 minerals that must be obtained through our diet. These consist of such things as calcium, phosphorus, sodium, chlorine and iron. A deficiency of iron can lead to anemia and reduce the amount of oxygen that can be carried by the blood. Vitamins, although these are only needed in small amounts, are essential for proper body function. Vitamin supplements are a fact in today's society. However, a properly balanced diet consisting of breads and cereals, fruits and vegetables can supply all the necessary vitamins and minerals.

iii. Fats and Carbohydrates

Fats and carbohydrates, as well as performing a number of other functions, are the basic fuels used to supply energy. Carbohydrate obtained from the diet comes almost exclusively from foods of plant origin such as grains, vegetables and fruit. Many of the artificial foods on sale today have carbohydrate or sugar added.

Fats are obtained from animal and vegetable foods such as butter, oils, fat or meat, nuts and dairy products. Besides the fat stored in our fat cells for use as an energy source, fat is also in the structure of membranes, skin, brain and nerve tissue.

iv. Water

Water is of vital importance to our survival because it represents the medium in which all of the reactions of the body occur. Most people are between 50 and 70 percent water. Water is continually lost from the body in urine, sweat and through the lungs during breathing. It is possible to survive for several weeks without food, but only a few days without water.

3. Metabolism

i. Delivery of Fuels to the Cell

The average meal contains approximately 65 percent carbohydrate, 25 percent protein and 10 percent fat. Following a meal these nutrients enter the blood and lymph from the gastrointestinal tract primarily as simple sugars, amino acids and triglycerides. The simple sugars and amino acids enter the blood and go directly to the liver where they are altered before being circulated to other tissues of the body.

The basal metabolic rate (BMR) refers to the rate at which the body uses energy when at rest. BMR is affected by:

- age (decreases with age)
- amount of body fat
- sex
- pregnancy
- fitness activity
- dieting

A major function of the liver is to convert most of the carbohydrates into glucose. Glucose is a major energy source – especially for the nervous system – and the body has developed a number of mechanisms to maintain an adequate level of blood glucose. Some of this glucose remains stored in the liver while the remaining portion enters the blood. From the blood, glucose can be absorbed into the muscle cell, the liver cell (and stored as triglyceride) or utilized by the nervous system. The triglycerides absorbed into the lymph as fat droplets enter the fat cells where they are stored.

ii. Utilization of Fuels by the Cell[30]

Of the various nutrients that we take in, only fats and carbohydrates are of significance during physical activity. The characteristics of the physical activity are an important determinant of their relative importance.

Fats: In prolonged, low intensity physical activity, fats are an important energy source as they become progressively important as the exercise is continued. In activity of this nature, we are working well within our aerobic capacities, and consequently the ATP used for muscle contraction comes from the breakdown of fats and to some extent carbohydrates.

Carbohydrates: As the intensity of the activity increases, there is an increased dependence on carbohydrate (glucose). This glucose is made available from a storage depot located right in the muscle and some is delivered from the liver via the blood. In intense activities, there is insufficient oxygen available to the muscle cell and much of the energy is supplied anaerobically. In this situation, the muscle glucose is the major source of fuel. Fatigue is often associated with an exhaustion of the body's glucose reserves. In the case of muscle, only a small supply of glucose is available. Depletion of this reserve removes a valuable fuel source that cannot be adequately substituted from other sources.

4. Tips for Leaders: Food for Thought

Tip: Improper diet leads to chronic fatigue and depression. Well-balanced diets are particularly important for individuals who participate in high intensity exercise programs. Educate your participants about the value of understanding and applying Canada's Food Guide in their daily eating habits.

Tip: Many adult Canadians are overweight as a result of too much food and too little exercise. Although physical activity doesn't offer a short-term solution to weight control, it does offer a long-term solution to the creeping obesity (the three-pounds-per-year syndrome) that threatens most people. Talking to your participants about the value of exercise in preventing depression can also have a direct impact on how people think about their eating habits.

Tip: If you run early morning exercise programs, advise participants to eat carbohydrates such as bread or cereal as far ahead of the actual class as they can. The prolonged overnight fasting period lowers body carbohydrate stores and a reduction in blood sugar may occur during exercise, causing dizziness and a lack of energy.

Tip: Talk to your participants about how low-to-moderate-intensity exercise over long periods of time (e.g. walking at a brisk pace for an hour) is the best way to burn off fat stores. Suggest that those who want to lose weight start building walks into their daily transportation needs.

Tip: As exercise becomes more vigorous, carbohydrates become the most important source of fuel. Because this fuel supply can be

depleted from muscles very rapidly, fatigue sets in quickly. As fatigue builds, so does the likelihood of injury. This is an additional reason why older people, and those who are primarily inactive or overweight, should participate in classes that are progressive and designed to suit their needs.

Understanding basic anatomy and physiology provides the "basics" for designing classes that improve fitness levels. If you apply the principles and guidelines included in the next section, the participants in your fitness classes should flourish in a broader, more holistic sense.

References for Unit Four:

[27] YWCA of Canada. **Fitness Leader Certification Program Manual.** page 21. Adapted.

[28] Just as it may be if the breath is held during effort. A good rule of thumb is the 3E guideline: **E**xhale with the **E**ffort of the **E**xercise.

[29] Adapted from: **Introduction to Human Physiology**, by Mary Griffiths, MacMillan, New York, 1974.

[30] 1 Calorie = 4.2 kilojoules

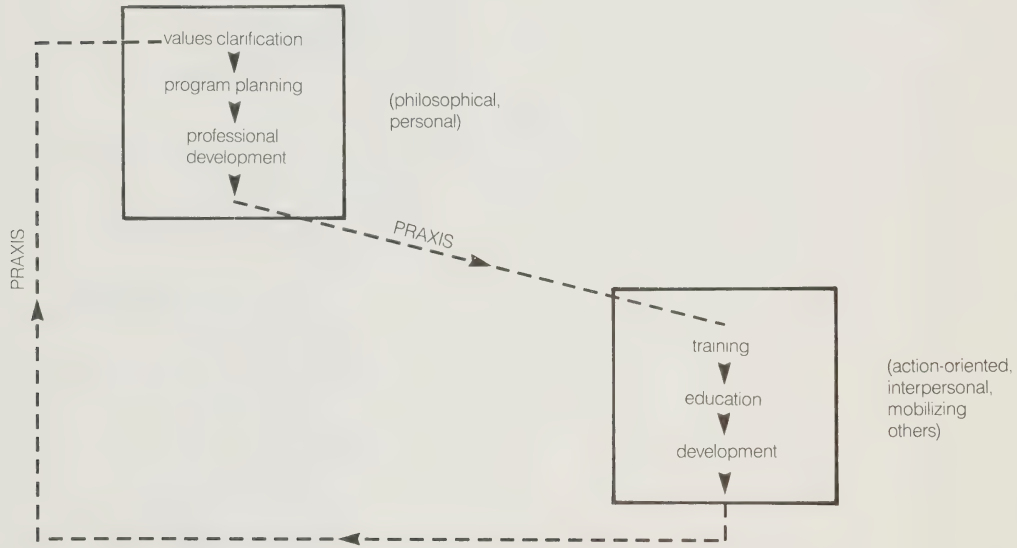
Unit Five:
Basics About Leadership

Unit Five:
Basics About Leadership

Once you understand the mechanics of running group classes, it becomes important to examine some basic leadership issues. This Unit looks at five of these: congruence, a participant-centred stance, communication, motivation and education.

I. Congruence

Congruence in Fitness Leadership means that there is consistency between what you say your values are about being a leader and what you actually do when you are leading classes and going about your daily business. If you think back to the "Praxis" (theory into action) concept discussed in Unit One, then congruence involves a good fit between the "philosophical or personal" aspects of leadership and the "action-oriented or interpersonal" ones. This congruence evolves as a result of the "Praxis" element – of thinking about your values and then translating them into action.



1. Values

Values are, in essence, deeply held beliefs. One approach describes seven criteria[31] for determining whether a person is actually holding a value about something. A full value involves:

a. Choosing

i. freely
ii. from alternatives
iii. after thoughtful consideration of the consequences of each alternative

b. Prizing

iv. cherishing, being happy with the choice
v. willing to affirm the choice publicly

c. Acting

vi. doing something with the choice
vii. repeatedly, in some pattern of life.

Values about fitness leadership are formed by a process that involves your feelings, thoughts, desires, actions and spiritual needs as you reflect on what you believe and then create ways to follow through on those beliefs.

Take a few minutes to sit back and reflect on what your values are for fitness leadership. What are the deeply held beliefs you have about being a fitness leader that you try (or will try) to put into practice in your classes?

The Value	How Will I Put it Into Practice

The values you have listed in the previous exercise are likely in various stages of development. Values that you are just beginning to adopt are described as being in a **"posted"** phase, because this is when most people talk about the value and discuss it in conversations with others, but they haven't actually started following through on it. They are really just putting it up like a poster to see what it looks like. You may have heard a fitness leader say that running safe classes is a strong value for her, but when you have been a part of her class, you have noticed that she encourages participants to do straight-leg situps holding 100 pound weights behind their heads. This leader is posting a value that is not yet operative! When values become **"operative"**, you follow through on them completely according to the definition described previously.

2. Ideas for Change

Look back at your previous list of values. Using a scale of 1 for posted and 5 for completely operative, rate your values for fitness leadership. For example, the previous leader might have listed the value of safe classes; in thinking about it, she knows that she has a lot to learn about how to deliver a safe class, but that she does recognize the need, so she might give herself a "2". When you have rated each of your values, jot down some ideas for how you might make some changes in your two lowest scores.

One important value about leadership that Fitness Ontario holds is that group classes should be centred on the needs and interests of participants. The next section addresses this value.

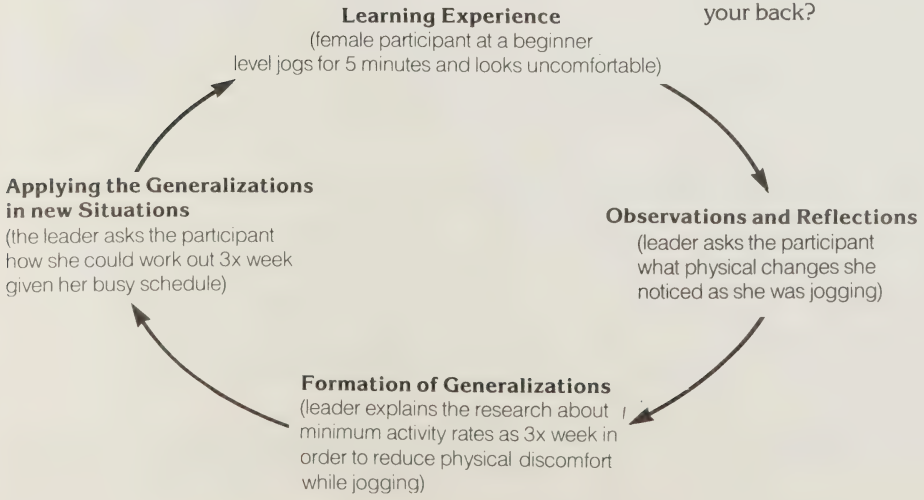
Value	Rating	Ideas for Change
1.		
2.		
3.		
4.		
5.		

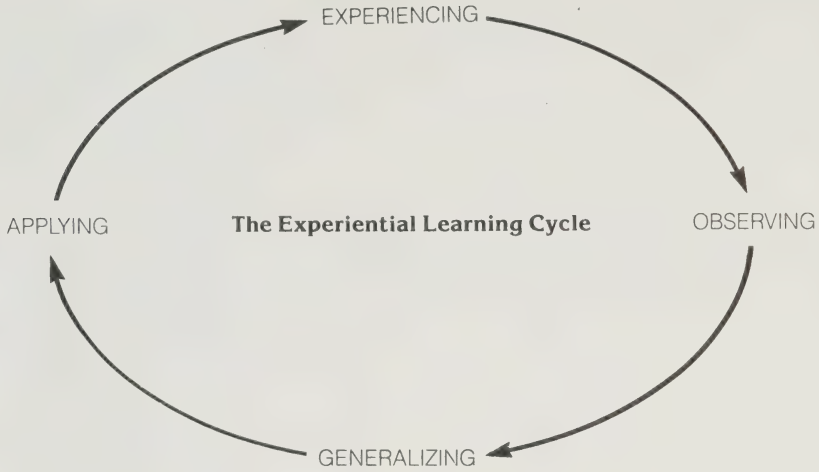
II. A Participant-Centred Stance

Fitness Leaders who focus their energy towards creating classes that are geared to the needs and interests of participants may be described as being "participant-centred". This means that classes are literally centred on the participants – on creating an environment where they will feel comfortable working out (training), learning (education) and growing (development) personally. The following chart outlines the parameters of a participant-centred stance and suggests how leaders can apply these basic principles in teaching their own classes.

Element	Principle	Application
1. Supportive Climate	Leader develops a supportive, stimulating, safe climate (see Unit VI: Program Planning)	• be at class 10 minutes early and stay 10 minutes after so that you can talk to participants and know them better • provide air time in class for two-way communication • be aware of and apply the rules for safe exercising • provide handouts for people to read
2. Respect for Individuality	Participants feel unique and accepted for how they are and what their goals are; they feel prized as individuals	• be supportive of participants who adapt exercises and routines according to their own physical and emotional needs; ask about particular problems they may have • ask people what their experiences have been in fitness and lifestyle so that you can draw on the expertise of those who are in the class – e.g. nurses, physiotherapist, athletes • have special 2 minute talks about areas participants know about – e.g. computer operator talks about stress in her business
3. Personal Meaning	Participants feel that what they learn or do is applicable in their daily lives	• give specific examples of how exercise routines are helpful in everyday situations – e.g. "For those of you who sit all day, this stretch is a perfect mid-day tension reliever that you can do at your desk" • ask people if they use things from class in their everyday lives • talk about the meaning of fitness in your own life – e.g. "I was wondering if I had the energy to teach tonight but then I had an image of all your faces and knew I'd feel 200% better after"
4. Shared Control	Participants feel that they share control over how the classes are developed and what goes on in them	• ask participants for input to class design by using some form of needs assessment

Element	Principle	Application
		• create opportunities for participants to share in the leadership of the program – e.g. an aerobics section where different people lead different parts • ask participants to bring in their favourite music so you can work it into your class design
5. Self-Responsibility	Participants take responsibility for their own fitness and lifestyle	• ask participants what one thing they could change that would make a positive difference in their lifestyle • talk about self-responsibility as a significant and positive step in achieving a healthy lifestyle • discuss concepts like medical self-care and how they are linked to fitness – e.g. preventing ingrown toenails, preventing heat exhaustion, preventing headaches, preventing shin splints • ask participants to monitor their training heart rates to recognize their limits • teach participants to adapt and modify exercises to suit their needs
6. Experiential Learning	Participants learn from doing something, thinking about what they felt, asking themselves what that means, and then answering the "so what" questions	• create activities like body isolations (e.g. hips moving alone) which encourage participants to focus on feeling or experiencing the activity in the present. Ask them questions such as – which hip has the largest range of motion or where do you feel this in your back?





Element	Principle	Application
7. Esprit de Corps	The class feels that it is a group that has an identity and is learning and growing together	• make comments on how you perceive the group – e.g. "this class is really feisty – you won't let me get away with anything" • encourage people to speak out in class – to state their views • discuss how the group has changed since you first started to meet them • ask participants to share their favorite and least liked exercises with other members of the group • interact interdependently with participants – e.g. ask them for assistance in special areas. The idea is to reduce the "social" distance between you and them so that you can relate as peers. This helps a group to mature more quickly
8. Emerging Goals	Class format and content is adapted to suit the changing needs of the participants	• watch the class carefully to pick up on new goals that are emerging – e.g. create a more advanced situp when the current ones become too easy • watch for signs that the class may be becoming bored; vary your patterns or ways of doing things • bring in handouts as people ask questions • ask participants for input to what they want to do – e.g. "Would you like to start on the floor or standing?"

Element	Principle	Application
9. Role Modelling	Participants feel that the leader is a good role model for a healthy lifestyle	• discuss your own successes and failures related to fitness and lifestyle; avoid preventing an "ideal" image • practise what you preach; work at improving the parts of your lifestyle that aren't as healthy as they could be • use self-disclosure to explain why you do a certain thing in class – e.g. "This exercise helps to loosen the muscle fibres or fascia in the heel. I have had plantar fasciitis and I know this really works. Has anyone else in here ever had that burning feeling in their heel?"
10. Evaluation and Feedback	Participants have input to how the course develops and how it might be improved	• provide self-monitoring systems and body awareness techniques so that participants can give themselves feedback on how they are doing • build in brief feedback exercises for yourself as leader so that you can adapt the program to suit participants' needs • do a "post mortem" at regular intervals – e.g. every 3 months to reflect on how things are going and what you want to change • work at maintaining open verbal communications with class members; talk to them during class

Pick three of the previous principles related to a participant-centred stance and develop one specific way that you could apply that principle in your next class. e.g.

Principle	Technique
Shared Control	• ask Fleur Pirouette to create a simple aerobic dance step and teach it to the class. Go over it with her ahead of time
Principle	**Technique**
_____	_____
	_____
	_____
_____	_____
	_____
	_____

Effective and efficient communication – the subject of the next section – is an important skill to develop if you want to make a participant-centred approach work well.

III. Communication

Fitness Leaders are often in a "communication bind". Group classes by their very nature tend to discourage two-way communication and as a result leaders have to be particularly conscious of whether they are communicating effectively and efficiently.

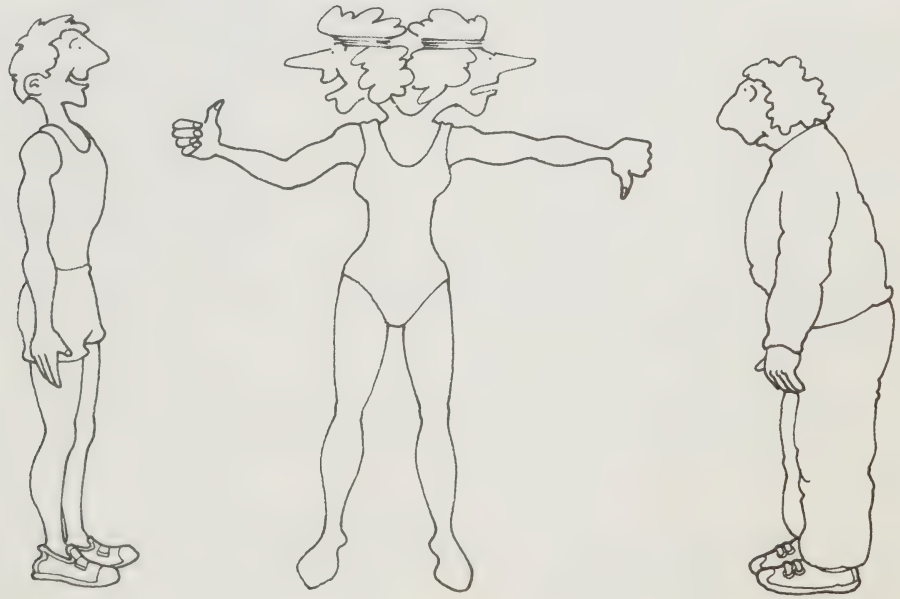
Effectively means using the appropriate skills to ensure that the message is heard, integrated and remembered.

Efficiently means getting across just the right amount of information in the right amount of time.

Because group classes are a fairly recent phenomenon, relatively little attention has been paid to the importance of good communication habits in instructors. The following list describes some of the more common **pitfalls** awaiting you as a leader. Place a check mark next to the one that you do the most.

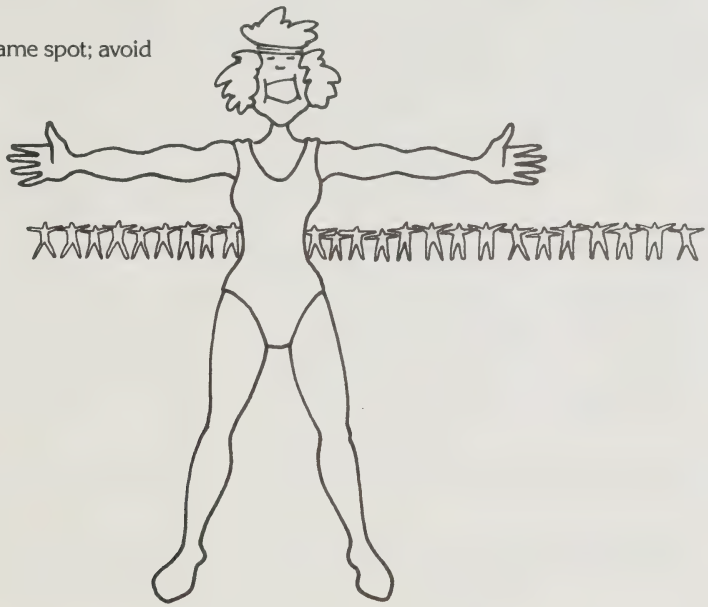
1. How to *Discourage* Communication: Twenty Helpful Tips

Tip	Example
1. Always give instructions as commands	"Situps are next. Start with 10 of our usual and then 10 more of each of the other three types."
2. Give lots of advice. Sprinkle your conversation liberally with "shoulds" and "oughts"	"You shouldn't drink so much diet pop; and while we're at it, you should have sex more often and stop biting your toenails."
3. Constantly judge people's abilities	"You do that very well. But you don't do that very well."



4. Always agree with everything everyone says	"You're so right. Right. Right. I can see what you mean."
5. Withdraw when a participant challenges what you are saying	"I guess you could be right."

Tip	Example
6. Take the expert stance whenever people are discussing fitness or lifestyle	"When I was taking my degree we studied that and the professor said . . ."
7. Lead every class from the same spot; avoid mixing with participants	



8. Always make positive comments about what people are doing	"Great. Now you are really moving. You are such a good group. That's really great. Great. Good. Great."
9. Be sarcastic	"Looks like you had a good Christmas."
10. Stereotype your participants	"Look at that leotard; it must have cost a fortune; she's probably just another one of these middle class, yuppie dames who want to prance around looking good."
11. Interpret people's facial expressions without checking them out	"She looks bored. I bet she already KNOWS THIS STUFF; she moves like a dancer; I wonder if I'm doing something wrong here."
12. Always give logical, not intuitive or emotional arguments	"Let's get our feelings out of this and talk about it rationally. You can't die from eating a little meat every day."
13. Diagnose what's wrong with people	"You know what's wrong with you?"

Tip	Example
14. Be a cheerleader type	
15. Always be reassuring to the least able member of the group	"You must be feeling really good about yourself. You were such a klutz before."
16. Use "yes-but" replies with people you disagree with	"Yes, but it doesn't really work that way because your arms don't attach to your ears."
17. Assume that your participants can't solve their own problems	"Let me see what I can do about this and I'll get back to you by the next class. Just leave it up to me."
18. Try to intimidate people by humoring them	"Ah, come on. You don't really feel that way, do you?"

19. Lean more on having answers than asking questions

20. Wear a halo

In thinking about the previous list, what are three specific changes you could work on to improve how you communicate as a leader?

2. How to Encourage Communication: The LIP Approach

LIP stands for **Listen, Interact** and **Present** – the three main communication skills in which fitness leaders need to develop competence.

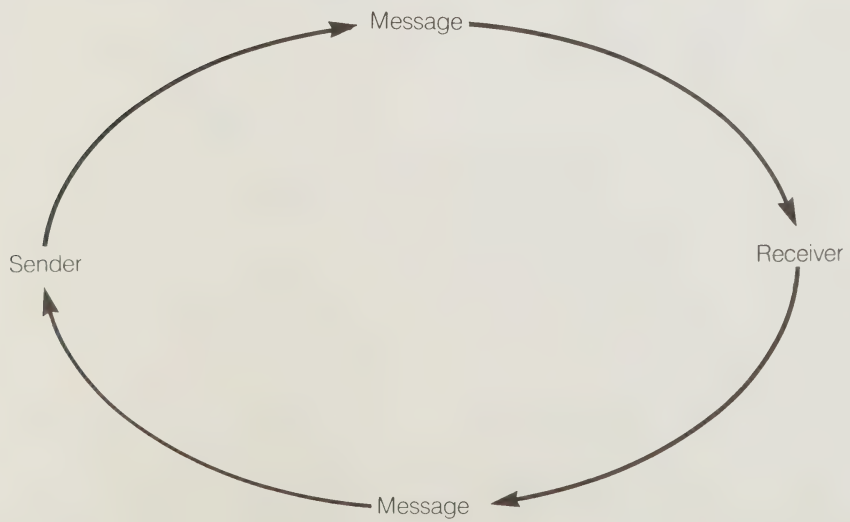
Leaders who are good communicators share some characteristics which make them stand out in an interpersonal sense. They are good listeners and can really attend to what a person is saying. They will ask questions to facilitate learning and to clarify what they don't understand. They are concerned that their communication is heard the way it was intended and will check out any perceived differences in content and intent. They give clear and inviting instructions. They are not easily intimidated and are prepared to be open about their points of view. When interacting with them as a participant, you have the feeling that your needs and interests are at the heart of the program and that every attempt will be made to ensure that your experience in class is a successful one.

Effective communicators ensure that their interactions with others are based on the assumption that people working together towards common goals can be mutually productive, with both parties feeling that they have gained from the encounter and that they are both basically good people. If we look at communications theory as a continuum, with passive behaviors at one end and aggressive behaviors at the other, then it becomes obvious that the outcomes from the latter two types of communication are distinctly different than from assertive encounters.

Anyone can be an effective communicator on a sunny day, when everything is going well and there are no clouds in the sky. The challenge is to communicate well when others are passive or aggressive or when you are tired or out of sorts. The LIP approach describes the skills you need to be an effective leader even on the stormy days – when everything seems to be going wrong.

Passive	Assertive	Aggressive
(lose/lose)	(win/win)	(win/lose)

Communication involves interaction:



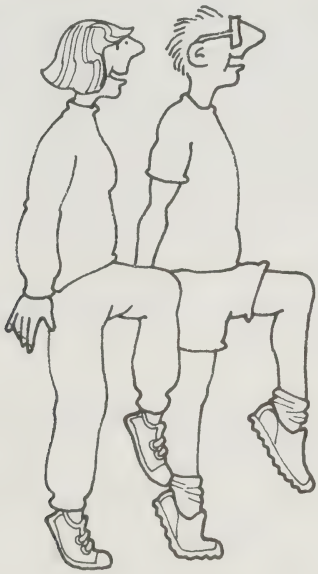
a. Listen
Interact
Present

Leaders need to listen a lot just to find out how things are going in their classes.

i. TIP: Participant-Observer Stance

This involves learning how to be a **participant-observer**, to be an active participant in the class you are teaching at the same time as you are observing what people are doing, saying, how they are moving etc. On paper, this can sound like an intimidating skill, but in actual practice, most leaders develop this skill quickly within the first year of being a leader.

PARTICIPANT-OBSERVER



Being a participant-observer involves **NOTICING** or **LISTENING** to:

- how people move
- what their energy levels are like at different points in the class
- what they say
- how they say it
- when they say it
- where they say it
- who hangs around with whom
- what the group personality is like
- what parts of the class are favorite and least liked
- what the class strengths and weaknesses are
- how people react to what you say and do; and how, when and where you say and do it

Good listeners rely a lot on their intuitive faculties, often discovering that something is amiss simply by feeling that things are "off". The next step once you have identified that there is a problem that needs to be corrected, is to develop the verbal listening skills to deal with it.

ii. TIP: Seven Common Roadblocks to Effective Listening[32]

Parrotting –
simple restating of what the person has already said without any acknowledgement of their intent or reasoning.

Over-Supporting –
e.g. "Now, now, don't worry; it's OK; just leave the whole thing up to me and I'll take care of everything."
This approach does not give people the opportunity to solve their own problems.

Gossiping –
questioning the person-details behind the message, thus building on already existing negative energy –
e.g. "Anyone I know?"

Closing –
e.g. "Look. I've made the decision and that's all there is to it. No more discussion."
The respondent often feels defensive when she/he takes this stance.

Judging –
e.g. "You shouldn't feel that way."
The listener makes a judgment about the motive, reasoning, or background of the speaker.

Ignoring –
e.g. "Really? I don't think it's a problem. No one else complained."
The receiver makes a non-committal remark and refuses to acknowledge the emotion in the message.

Rationalizing –
e.g. "It's just a hot day and you're feeling a little low. It will work out OK."
The listener adds her own reasons to the way the speaker feels, thus negating the emotional and factual content of the speaker's message.

Which of these blocks do you use the most in difficult communication situations?

Which of these blocks do you use the least in difficult communication situations?

What is the one change you could make to improve your listening skills as a fitness leader?

iii. TIP: Seven Building Blocks for Good Listening

Having spent some time thinking about "Roadblocks" to Good Listening create a list of five or six "Building Blocks" to Good Listening that you use or have seen used in a fitness program.

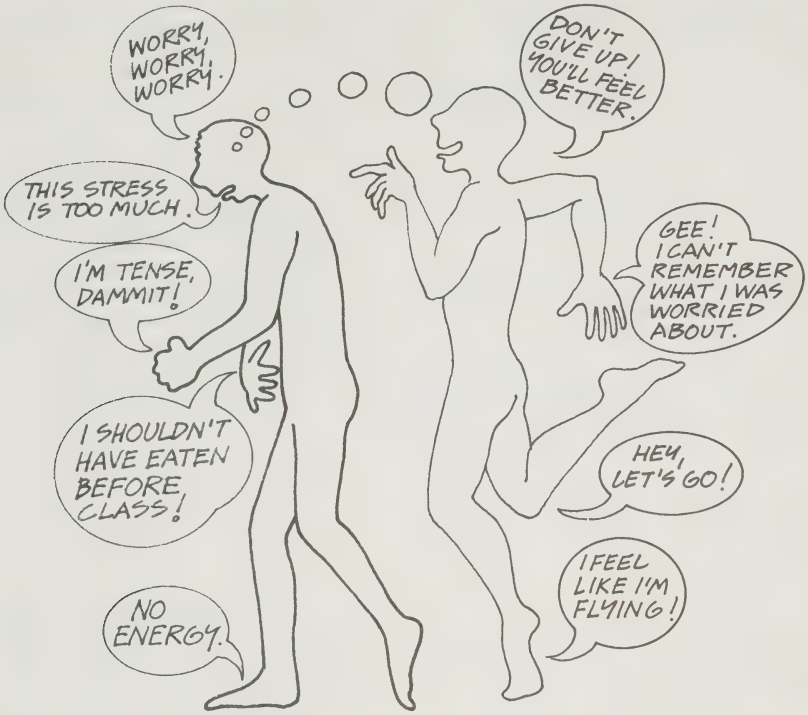
iv. TIP: Attend to Body Language

Learn to listen to body language as an indicator of how your class is progressing. Be sure to check it out carefully before jumping to conclusions.

What types of body languages would you expect to see in a typical class? What are some possible meanings for those indicators?

Body Language

Possible Meanings



b. **L**isten
Interact
Present

Interactions between leaders and participants and among participants provide the groundwork for personal improvement. Once again, a skilled leader can have a significant impact on the quality of a fitness course simply by developing quality communication skills for interaction.

i. TIP: Giving Feedback

A big pitfall in communication is the illusion that communication is happening when it really isn't. Feedback offers the opportunity to check out whether or not a message is received the way it was intended. This is the first generally accepted meaning of the word "feedback" – i.e. someone says something to you and then you paraphrase or interpret the message to see whether you understood what was said in the way it was intended. The diagram on the next page outlines this process.

The second general meaning is that you give someone a message about something they have done or said and this message is couched in an educational perspective; e.g. "When you do . . . you could strain . . . I would prefer that you . . ." This second meaning often has a focus on personal improvement and if this kind of feedback is used constructively it can provide participants with essential information about fitness and lifestyle changes.

Effective verbal feedback of this second educational type is focused on:

- specific (here and now) information rather than general (there and then) commentary
- the behavior rather than the person
- observations (what, how, when) rather than inferences (why)
- constructive change (positive) rather than destructive commentary (negative)
- behavior descriptions which are in terms of "more or less" rather than "either-or"
- an appropriate amount of information for the receiver to use rather than how much information the sender wants to give
- the value the information may have to the receiver rather than the "release" experienced by the sender

• behavior which is changeable rather than fixed
• the sharing of ideas and information in order to generate alternatives rather than giving advice which suggests specific solutions

In learning to give feedback, it is helpful to have a pattern in mind that will organize your thinking. If you remember this one: "When you _____, You _____ or I felt _____; It might be better if you _____ so don't hurt your back." Once you become comfortable giving feedback, you will vary the statement easily to suit each situation.

Avoid giving feedback in the old "sandwich" style – first a positive remark, then a critical one and then another positive one.

As soon as you have done this once, the person you are talking to knows what is going on and will often ignore the positive bread on the sandwich and just focus on the critical filling. Although it is helpful to think of "strokes and pokes" as a way to organize your thoughts, avoid putting everything into a predictable order. Sometimes sandwiches are just filled with bologna!

ii. TIP: Receiving Feedback

Knowing how to receive feedback is an important leadership skill. If you can remember to follow these rules, you will learn a lot about yourself:

• don't explain, defend or deny – listen silently to try to understand clearly what the other person is saying
• resist the temptation to resist the feedback – be as open to hearing it as you can; don't argue
• ask questions of clarification to ensure that you are getting the right message

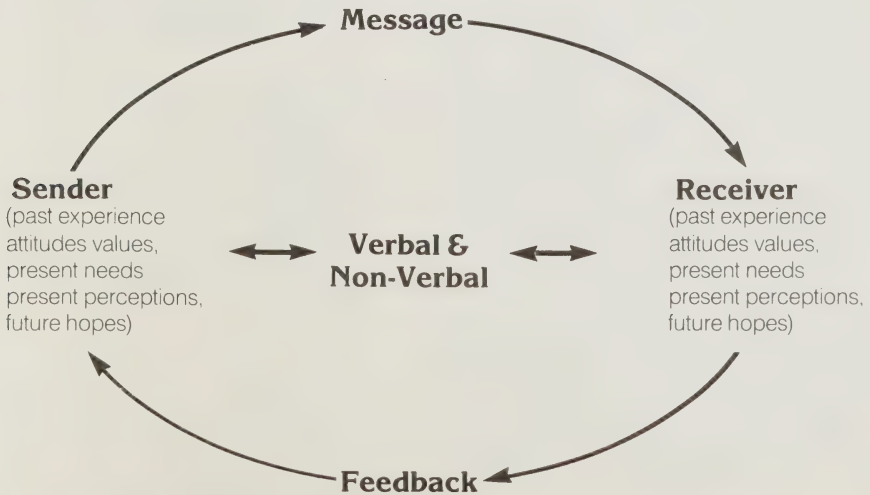
Although these rules are difficult to follow, they can provide significant rewards to those who use them. The idea is not to agree with all the feedback you get but to be receptive to getting feedback and then to be certain you understand it.

Think about yourself as a leader. What would you like feedback on?

_____
_____
_____
_____
_____
_____

Think about yourself as a participant in a fitness class. What would you like feedback on?

_____
_____
_____
_____
_____
_____



iii. TIP: Feedback Trigger Sheet

Being able to give good feedback involves knowing what to give feedback about. A feedback trigger sheet can serve as a reminder to you about potential feedback areas when you are teaching your classes. Add as many items as you can to the following list and then use the space below to group these items into similar categories for your own feedback trigger sheet.

What should fitness leaders be saying as feedback to participants in group classes?

- ability to concentrate
- posture – e.g. head too far forward
  –"shoulders up"
- put feeling into it
- don't hyperextend joints
- knees over toes

iv. TIP: Paraphrasing

Paraphrasing is a form of feedback. It is stating in your own way and in your own words what you have understood from another person's statements. Many people automatically paraphrase without ever being conscious of doing it. When you give someone directions to get somewhere, he/she usually repeats the directions. Tell people your phone number and they will usually repeat it to make sure they heard it correctly. However, if someone makes a complicated statement, people will often agree or disagree without trying to find out if they are responding to what the person intended to say. Many disagreements are the result of people not checking each other's meanings before proceeding with their own meanings.

People sometimes think of paraphrasing as just rephrasing the other person's words. This is rarely effective and leads to an illusion of understanding. For example:

George: Jim should not be exercising today.
Steven: You mean you do not want him in class?
George: That's right.

Instead of just rewording the statement, Steven might have asked a more specific question. For example:

George: Jim should not be exercising today.
Steven: You mean he is too ill to work out?
George: No, I mean he should move to the intermediate class on Tuesdays and Thursdays.
Steven: I didn't realize you were thinking about that. Did you know he chose today because he gets a lift with . . .

Paraphrasing serves several purposes:

- it increases the effectiveness of communication by providing feedback
- it checks for accuracy of understanding
- it often results in additional information being exchanged
- it conveys the impression that you are really listening and are interested in understanding the other person

v. TIP: Behavior Description

Behavior description means reporting what you see and hear without placing a judgment on behavior. Behavior description tells someone your perceptions without accusing them or making inferences about their motivation. You are trying to tell another person what you are seeing and hearing in a clear enough way so that they can "see" themselves.

As you read the following statements, imagine what your reaction would be if they were directed at you:

> – "You certainly are out of shape."
> – "You are disinterested and deliberately not cooperating."
> – "You are not trying hard enough."

The above statements are feedback in the sense that they communicate reactions to another person's behavior. However, they are not the type of feedback that stimulates effective communication, shared understandings or problem solving. Each of these statements implies a judgment. Each one infers some state of mind or feeling that the person making the statement cannot know without checking out. Each of the above statements can easily trigger defensive behavior and shut down communications. Few people like to be told they are out of shape (even if it is true), disinterested, uncooperative, rude or insensitive.

Rules for Feedback and Behavior

- Describe what you can see, hear or smell. Do not label, judge or play psychiatrist.
- Be specific rather than general. Do not use words like always, never, everyone, because these words are usually untrue and they stimulate defensiveness.
- Take into account the needs of the receiver of your statement. Do not tread on people's needs for safety or self esteem.

If the rules are applied, then the statements in the previous box might be rephrased as follows:

> "Your recovery pulse rate is . . . , you were breathing heavily after two minutes of jogging; I had the feeling from the look on your face that the stretching exercises are painful."

"I noticed that you've been late for the last three classes. You sat out two routines today and I'm wondering whether there is something about the classes that is bothering you."

If you assume you know someone's motivation, attitudes or personality traits, there is not much point in talking. If you do not assume you know it all, then behavior description is a useful way to start talking. To develop skill in describing behavior, it is necessary to sharpen your observation skills and focus attention on what is actually happening, holding back on making judgments or interpretations.

vi. TIP: Asking Questions

Skillful questioning helps learning. It also requires skillful listening. Keep the following rules in mind when you are asking questions as a fitness leader.

- Know **why** you are asking the question. People ask questions for a number of reasons, some of which are:
  - to gain information
  - to uncover motives and gain insight
  - to give information
  - to obtain better involvement
  - to check understanding and interest
  - to start someone thinking
  - to reach agreement
  - to bring attention back to the subject
  - to give positive feedback and build trust
  - to discover anxiety levels
  - to determine someone's style[33]

- Use good timing. Don't ask questions when the music is loud, when people are too out of breath to reply when others are listening inappropriately.
- Use common language. Avoid technical jargon of fitness when you are aware that some class participants don't understand. Everyday words often work just as well as scientific ones.

• Use a variety of question styles. "Open" questions invite commentary and opinions. "Closed" questions ask for specific short answers.
• Avoid ambiguous questions: know what you want to ask and ask it clearly e.g. "Is your cold getting any better?" is more specific than "Hello, how are you?"
• Balance the number of questions you ask to different people, making sure that you involve all class members equally in your conversations.
• Use a "bridge" to introduce sensitive questions e.g. "I noticed that you have been away for a couple of weeks. I am wondering if the class is still meeting your needs?"

Understanding your own motivation for asking questions can go a long way towards improving the quality of your questioning technique.

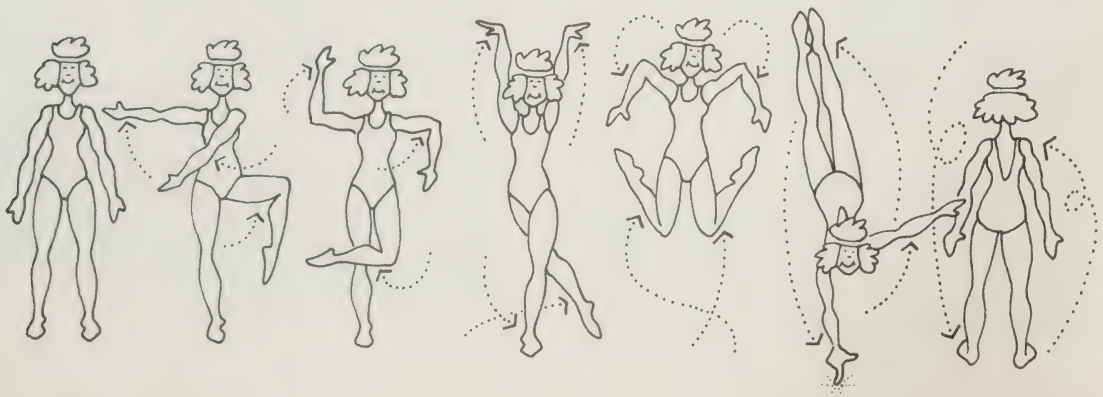
c. **L**isten
Interact
Present

In addition to listening and interacting, leaders also need to develop good presentation skills. This usually involves presenting information and movements in an interesting and enjoyable way.

i. TIP: How to Teach a New Exercise/ Movement

• demonstrate simple exercises/movements in the regular flow of the class; for more complex exercises/movements, teach them separately prior to integrating them into the flow of the class
• teach complex movements using the "whole-part-whole" method i.e. demonstrate the entire movement, then break it down into smaller sections according to degree of difficulty, then review the larger "whole" picture again
• demonstrate the movement in a variety of positions, e.g. facing the class, with your back to the class, in profile, on an angle, on the floor, standing, sitting, using another participant to support you etc. Generally speaking, the more complex the exercise/ movement, the more positions you will need to do to teach it
• use word clues slightly ahead of when you expect the group to do something e.g. in situps, while they are rolling back down to the floor, indicate what you want them to do on the next rollup
• count in a variety of ways to stimulate interest and keep people mentally involved in what you are doing e.g. in descending order, starting with the total number of repetitions e.g. for pushups, 16, 15, 14 etc. or in sets e.g. 8 sets of 4: 8,3,2,1, 7,3,2,1, 6,3,2,1, 5,3,2,1, etc. or out loud, or in whispers, or with claps, or with foot stamping etc.
• give the exercise a name that people will remember, e.g. side leg lifts in a standing position become "pendulums"
• teach complex movements at half-time prior to doing them at full time
• once participants know an exercise or movement well, play with the tempo to adjust the degree of difficulty, e.g. slow down pushups, speed up leg lifts or vice versa, depending on the group
• avoid questions like "Do you understand?" or "Has everyone got that?", which put the burden for being able to do the exercise on the participant. Instead, ask questions like, "Which parts do you want me to do again?" or "What should I clarify?", which put the responsibility for teaching the movements on you as the leader

The chart on this page outlines several instructional approaches to teaching a new exercise to a fitness class. Different formats and teaching techniques provide variety in a program and ensure that you are appealing to a variety of learning styles. How many of these approaches do you use?



ii. TIP: When to Use a Handout[34]

- when you want to deliver a significant amount of information quickly
- when you want to extend yourself in time and space. Participants who take handouts home with them literally extend the class into their living rooms
- when you want ideas to be stored and later retrieved
- when the reliability and validity of the information is important – handouts give you the opportunity to include references and other source data that you wouldn't normally use in conversation
- when written communication is more acceptable. Sometimes significant ideas are approached more easily when they are written down. e.g. information on kegling (vaginal) exercises for women.
- when you want participants to make important decisions or think about changing their actions. A handout on decision making about lifestyle provides a format and recording system for participants' thoughts. Writing things down also permits more objective analysis than speaking and therefore facilitates decision making
- when you need a written supplement to complement what you are talking about in class. e.g. If you have been talking about healthy back care, a handout on exercises to do at home would be useful
- when you want participants to take an active part in thinking about a subject area by filling in a risk index or completing sentences

1. For what topic areas would you like to have handouts?

2. How often can you afford to give handouts to your classes?

3. How often will you be using handouts with your next class?

iii. TIP: How to Use a Handout

- know your participants – what they are interested in, what their objectives are, what they expect from you as a leader
- know why you are using the handout: is it to educate, to provoke thought, to assess, to stimulate discussion? When you know why you are using a handout, then it is easier to decide how you want to use it.
- read about the handout subject area ahead of time so that you will feel comfortable discussing related issues when you distribute the handout
- communicate in terms of your participants' understanding of the subject e.g. a handout on shin splints need not go into surgical correction techniques
- use your participants' language level
- do something with the handout – don't just leave it out as a pickup. Introduce it, suggest a resource for further information, prepare questions ahead of time, entertain questions, etc. Often the followup that goes with the handout is the most useful part of having a handout and it can take as little as two minutes of class time
- be sure that the materials you are distributing are in sync with your values about fitness. If you are distributing a magazine article that is chauvinistic, you are unwittingly supporting that point of view. Similarly, if there is an ad in that article promoting the cardiovascular benefits of bee pollen, then you are also helping to promote shysters in the fitness business
- be brief; most participants want to work out and will become impatient if you decide that they need to listen to you lecture. Plan on having an absolute maximum of 5 minutes for distributing and discussing a handout; try to keep it down to two or three minutes.

iv. TIP: Educating Your Participants

When it comes to education[35] fitness leaders face a number of unique challenges and frustrations. There is often pressure to try to become all things to all people – a combination of physiotherapist, nutritionist, psychiatrist, doctor and exercise leader. Although experience makes it very clear that this is both undesirable and impossible, most fitness professionals feel the need to know something about each of these disciplines so that they can serve as a community resource for good health. This too is a unique opportunity – to spread the word about preventive health and medical self care, and to do so within some common sense guidelines that don't pretend to infringe on other professions.

The following approaches may be helpful to you in your role as an educator where you need to have some basic information to pass on to participants without having to do a lot of research or endless preparation.

- ***Create a Resource File:***

The first step is to set up a system for organizing the information that you want to keep. Most leaders need more than one type of information. They will be using short quotations on a variety of subjects as well as brief paragraphs; articles and chapters need to be stored under appropriate headings to ensure easy access. Addresses describing where to get certain types of information and lists of key people are also important parts of a fitness leader's resources.

Pretend that you have an endless supply of file folders and a large filing drawer. Make up your "Leader Library", writing headings and sub-headings to describe where you will be keeping your educational materials.

- ***Organize Brief Educational Presentations:***

For three to five minute presentations, share your information with participants at the beginning or end of class, when you have a few minutes in which people will be attentive to what you have to say:

- introduce the topic areas casually and relay the information in a conversational tone
- provide a little time for questions or a brief discussion if this arises naturally
- refer to key words from these presentations at other times in class or when an appropriate moment arises so that participants will be reminded of the message
- be prepared to recommend an interesting book as followup

- ***For shorter one-minute chats:***

- deliver them anytime during class or before or after class when you have participants' attention for a minute or so
- these can be useful during activities when the music is low enough that you don't have to shout over it
- refer to key words from your chat again at other appropriate times so that participants will be reminded of the message
- allow time for discussion if people are interested in pursuing further

For brief quotations:

- use at anytime
- look up one or two different quotations for use during each class

• try posting these in a place where they can collect and build so that people will be able to look at all the ideas that have been generated during the length of the course
• ask participants to take turns bringing in their own quotations – perhaps one per week; post these too

v. TIP: The Right Kind of Energy

Fitness leaders have a unique sort of power with their classes. If handled appropriately, they can use their positions to empower their participants into feeling that they – the participants – have the capability to maintain a healthy lifestyle and become responsible for their own fitness management. One of the potential pitfalls for you as a leader is to create a situation where group members are "over-impressed" with what you can do and as a result don't feel that they have the ability to ever meet your standards.

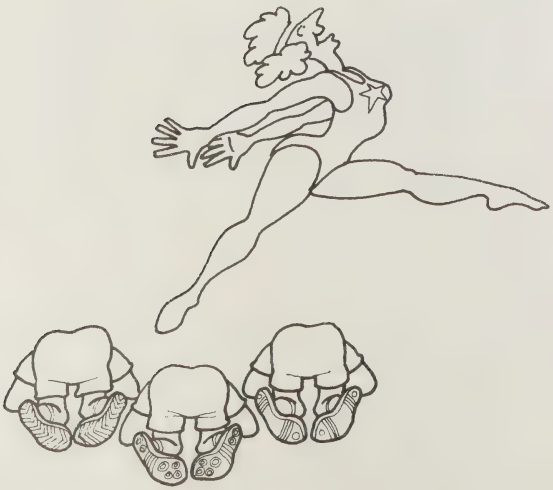
In the first situation, the social distance between leader and participants is decreased and there is a sense of everyone in the group working together to achieve worthwhile goals. In the second situation, the leader is seen as having skills and abilities and a genetic endowment that participants will never be able to achieve. Sometimes this second situation arises because the leader is too charismatic. Charisma may be defined as

A unique personal power conceived of as belonging to those exceptional individuals capable of securing the allegiance of large numbers of people.

The competitive nature of the fitness leadership industry can lend itself to instructors going to great lengths to secure a loyal following. Sadly, this usually involves the development of the hard energy that comes with charisma and also creates a distancing factor between the leader and the group, where group members are overwhelmed by how "great" the leader is.

The trick is to "underwhelm" participants in a dynamic way.

What could you do to ensure that your energy as a leader is appropriate to your classes? i.e. What will you do to ensure that you are approachable, open, fallible, etc.



d. In Summary

Briefly review the LIP approach to communication as outlined in this Unit. Use the scales and questions below to estimate your skill level in these three aspects of communication and then to set some realistic goals for your own development.

Listening Skills:

1	2	3	4	5	6
low					high

Ideas for change: _____

_____

_____

Interacting Skills:

1	2	3	4	5	6
low					high

Ideas for change: _____

_____

_____

Presenting Skills:

1	2	3	4	5	6
low					high

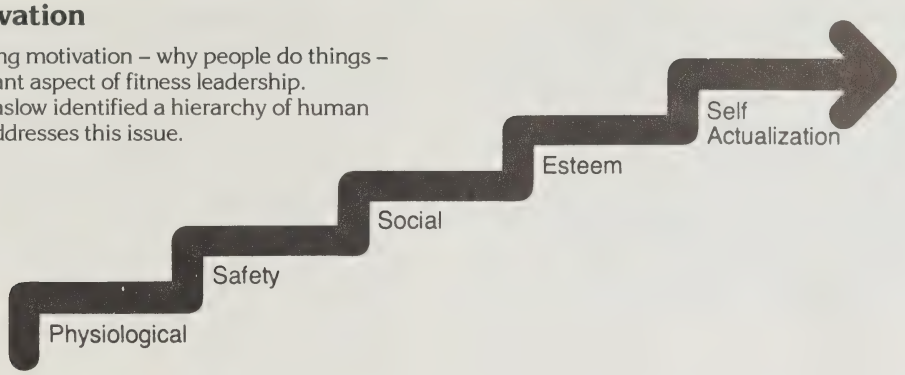
Ideas for change: _____

_____

_____

IV. Motivation

Understanding motivation – why people do things – is an important aspect of fitness leadership. Abraham Maslow identified a hierarchy of human needs that addresses this issue.



1. Physiological Needs

The most basic need is **physiological**. These are human needs to keep life going through food, shelter, warmth, water, rest and attention to the body. Until these basic needs are satisfied, (at least to the degree needed for sufficient operation of the body) the majority of a person's activity will be in search of ways to satisfy these needs and other levels of need will not provide much power. For example, a person cannot participate well in your class if he or she is suffering from exhaustion or extreme hunger. People can be more aware of the fact that it is lunch time, or coffee break time than they are of what they are doing in class:

Practical Applications

- proper room temperature for physical activity
- clean floor; mats where necessary
- information on avoiding a large meal before class
- clean and adequate changing facilities and rest rooms

2. Safety Needs

Once physiological needs are somewhat satisfied, **safety or security needs** become the "drivers" of behavior. These include real physical safety as well as the feeling of being safe from both physical and psychological harm. Most adults want to be free from fear and anxiety. They want some structure that ensures a relatively orderly and predictable environment:

Practical Applications

- state clearly the time frames for the class
- talk and behave in such a manner that your participants will have confidence in you as an instructor
- explain what exercises they should avoid and why
- discuss the importance of monitoring their own activity levels so that they don't overdo it
- encourage them to wear footwear that will provide adequate support and cushioning and prevent slipping

3. Social Needs

Social needs emerge after the first two basic levels are relatively satisfied. Most people like to interact and be with others in situations where they feel they are accepted and belong. When social needs become strong, people enjoy others in the room. Before a person can enjoy and learn from others, previously mentioned safety needs have to be attended to; otherwise fear blocks out the opportunity for socialization:

Practical Applications

- know your participants' names
- encourage them to get to know their classmates; provide opportunities for partner or small group work
- relate the importance of physical fitness to how they present themselves in social situations

4. Esteem Needs

After people begin to satisfy the need to belong, they generally want to be more than just a member of the group. They want to feel useful and to have some effect on the environment and the group. These **esteem needs** refer to an individual's need for self respect and the recognition of others. Satisfaction of these esteem needs produces a feeling of self confidence and personal power. When people are unable to satisfy these needs, they may leave the situation or they may resort to disruptive behavior that will give them additional attention:

Practical Applications

- use positive reinforcement where appropriate
- have participants occasionally lead a part of the class
- encourage participants to arrive early and conduct their own warmups
- ask for feedback on your performance as a leader
- take time to listen to opinions and suggestions of class members
- avoid ignoring one or two class members who don't approach you readily; make regular contact with all class members
- involve the class in planning
- give them guidelines for assessing their own progress

5. Self Actualization Needs

The need for **self actualization** refers to the need in each person to develop his/her own unique potential. It is the inner drive to express and become what you are capable of becoming. Of all the needs discussed by Maslow, this is the one that social and behavioral scientists know least about. Perhaps this is because people express and satisfy this need in different ways. The need for self actualization is never satisfied. People are always interested in the process of finding new goals and in new forms of self expression:

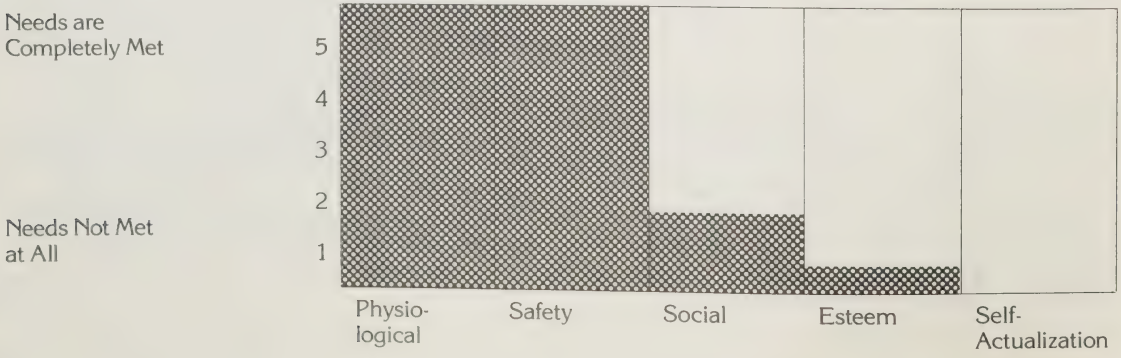
Practical Applications

- respect individual approaches to doing various activities (encourage participants to do activities and exercises in their own way, and not to try to copy you exactly)
- encourage participants to use their fitness in other physical recreation activities
- where appropriate, recommend books, films, courses which would benefit participants
- respect each person's uniqueness; encourage participants to develop to their greatest potentials

This theory suggests that until one level of needs has been somewhat satisfied, a person's behavior is not motivated by the next higher level of need. The term "somewhat satisfied" is used because most people in our society tend to be partially gratified at each level. There is generally more satisfaction, and consequently less drive at the physiological and safety levels than at the other levels.

While the general picture of an adult in a particular situation is partial satisfaction and partial need, adults in new settings can find themselves back at level two despite the fact that level two is mostly satisfied in other situations. Adults who feel secure and accepted at home are still subject to safety and social needs when they enter a new situation. These are the very needs that predominate in the first meetings of a class.

One example of a blocked motive might be a woman who has joined a jazz-fit class and is having difficulty learning because she feels intimidated by the considerable skill levels of others in the class. She has trouble concentrating because she doesn't feel she's good enough to be there. Here is how you might chart how her needs are being met:



Assume that you are the leader in this class. How would you deal with this woman?

Think back to how you felt ten minutes prior to this BASICS course starting. Chart your needs by shading the appropriate columns.

How are your needs being satisfied now? Shade the chart below to describe where you see yourself:

Compare the two charts. What similarities/differences do you notice?

How do you account for this?

Becoming aware of what motivates people to participate in your classes is the first step towards understanding how to create programs that they will find satisfying and stimulating. Motivating participants in an area like fitness and lifestyle involves much more than this first step of thinking about their needs. In essence, it is the most competent instructor who is the best motivator – i.e. leaders who attend to their own professional development needs on a regular basis are usually most effective in working with their participants.

The next Unit deals with Program Planning Basics. Once you

- have a framework for your classes
- know how to design them
- understand how the body moves and works, and
- can apply some leadership principles,

the next step is to integrate these learnings into planning effective programs.

References for Unit Five:

[31] Smith, Maury. **A Practical Guide to Value Clarification.** University Associates, Inc. La Jolla, California 92037, 1977, page 7.

[32] Adapted from "Active Listening" in **Managing Stress Before It Manages You** by Steinmetz, Blankenship, Brown, Hall, Miller. Bull Publishing Co. Palo Alto, California, 1980, page 62.

[33] Hunsaker, Phillip and Anthony Alesandra. **The Art of Managing People.** Prentice-Hall Inc. New Jersey, 1980, pages 95-121. Adapted.

[34] Vardaman, George T. **Making Successful Presentations.** American Management Associates, New York, 198, pages 32-37. Adapted.

[35] Strachan, Dorothy. "Banking on Ideas" in **Fitness Leader.** Pitters Publishing, Ottawa, Canada. Vol. II, #2, October 1983. Adapted.

Unit Six:
Program Planning Basics

I. Classes Into Programs

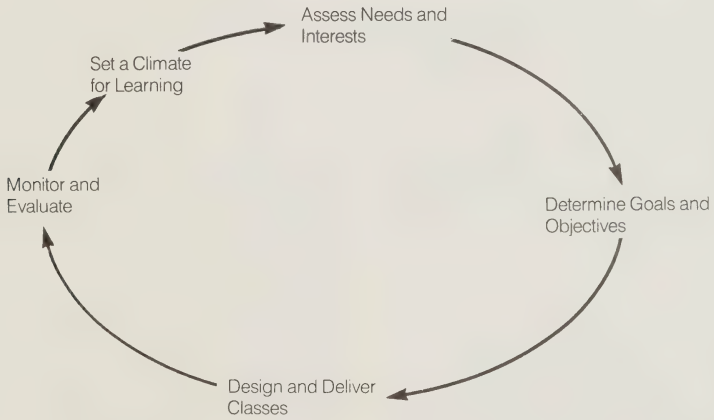
II. Developmental Design

I. Classes into Programs

Good planning is an important part of good leadership. Once you can create and lead a class, the next challenge is to organize a number of those classes into a program that meets the needs of your participants, is based on their priorities, is delivered in a safe and enjoyable manner, and in which there are opportunities for ongoing feedback and evaluation. In short – the skill is called "Program Planning" and involves a reasoned and organized approach to how you set up your classes. The following model outlines one approach to program planning in fitness classes:

This model is cyclical, and also emphasizes that program planning is an ongoing process i.e. while you are teaching classes, you are also attending to what is happening as the group matures and develops new skills. As a result, you are constantly listening to how the group is doing and making adjustments to your program as you see fit.

Thus, although you will actually do a good deal of climate setting at the first class, it is also a part of every class that you teach. Similarly, although you will determine priorities and set goals at the outset of the total program, you also do that on an ongoing basis within each class. This can provide a significant challenge to you as a leader; adults bring such a wide variety of background experiences, intentions and interests to a fitness class that it can be difficult to provide leadership that respects this diversity. Basing your classes on sound program planning principles is one way to do this.



1. Climate Setting

Climate is a term that is used to describe what it feels like to be in a certain environment. In a positive fitness class environment, participants feel good about being involved in the class, they like what they are learning and feel that it will be useful to them; they feel that they have some influence on what and how you are teaching them and that they are accepted by you and the other members of the group.

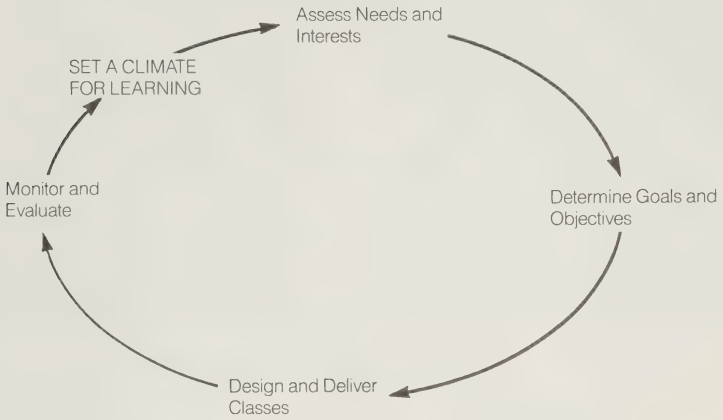
The climate setting methods that create this environment are designed to:

- reduce anxiety and help participants feel comfortable
- decrease the social distance between participants and leaders
- increase learners' awareness of and responsibility for their own goals

Some climate has been formed before you even start the first class. People will have developed their own impressions and expectations from the brochure that advertised the class, or by word of mouth. As people enter the building in which the class will take place, they develop a sense (right or wrong) of what the classes will be like. Before classes ever begin you can start to create a positive climate by:

- making the brochure clear and inviting
- telling people what to wear and why it is important
- asking people what they want most out of the program
- giving clear instructions
- checking that registration is taken care of
- making signs to help people locate your class

Climate setting usually revolves around three facets of a program: the interpersonal process, the physical environment and the program structure.



a. The Interpersonal Process

The leader is a key force in setting a healthy, non-threatening interpersonal climate in a fitness class. Leadership responsibilities in this area include three major climate-setting behaviors:

- Permission
- Pleasure
- Protection

i. Permission–giving behavior encourages participants to feel that they can relax and be themselves in your classes. This often involves people feeling comfortable making mistakes, trying new things, being spontaneous, interacting with you in a casual manner.

TIPS:

- present yourself in a friendly and informal manner
- encourage participants to improvise with their own movements
- ask participants for suggestions for music: whether they want to start class standing, sitting, lying down; whether they want more time/energy spent on a certain part of class
- adapt your classes so that they are responsive to group members' suggestions
- encourage participants to create their own body signatures; don't try to make them carbon copies of you
- laugh at yourself and encourage others to laugh at themselves, not at others

ii. Pleasure–oriented classes invite participants to enjoy their physical activity and in doing so, to understand the joy of movement itself. You can't dictate pleasure. If people are enjoying your classes, they will tell you in a number of ways – by returning regularly, by telling you how they like what you do; by putting a lot of energy into the class.

TIPS:

- use music the participants have chosen
- ask them which warmup they like the best and then repeat it an extra time
- design exercises that will give them success both immediately and on a long-term basis
- vary your instructional approach
- bring in a "treat" on a regular basis, such as a book to recommend or a short film or a quotation etc.
- avoid telling people to "smile". A smile is a symptom and can mean a lot of things – anything from nervousness, to personal discomfort, or a cheek twitch. People will usually smile if you ask them to but it doesn't mean they are having fun. Real smiles are unsolicited
- emphasize an approach which looks at the "total person" rather than just the "body"; this usually results in people in the class getting to know one another and getting pleasure out of each other's company
- design classes that **YOU** enjoy

iii. Protection–giving behavior sets up a safe environment for your classes. At an interpersonal level this involves asking about health history and personal preferences as well as ensuring that people are not compared to one another or put into positions where they may feel ridiculed.

TIPS:
- use a PAR-Q form or some other similar device to screen those who are in your program
- ask people what they want out of your class and discuss whether their needs are appropriate to others' needs in the class
- avoid comparing people's achievements, physical makeup, etc.
- don't give direct one-on-one feedback in front of the large group
- know the abilities of your group members so that you can design safe and yet challenging exercises for them
- work out with the group at an appropriate pace for them; avoid getting too advanced

b. The Physical Environment

Times have changed. The days of the smelly, old walk-up gyms "for men only" in the seedier parts of town are gone. Participants today have higher expectations and want to feel safe and comfortable when they are working out. Think about the last space where you worked out. How does the physical environment part of climate setting rate on the following checklist?

Item	Rating					Comments
	poor		average		excellent	
	1	2	3	4	5	
air circulation	1	2	3	4	5	_____
floor	1	2	3	4	5	_____
security	1	2	3	4	5	_____
changing area	1	2	3	4	5	_____
washrooms	1	2	3	4	5	_____
showers	1	2	3	4	5	_____
windows	1	2	3	4	5	_____
heating	1	2	3	4	5	_____
lighting	1	2	3	4	5	_____
privacy	1	2	3	4	5	_____
sound system	1	2	3	4	5	_____
amount of space	1	2	3	4	5	_____
ceiling	1	2	3	4	5	_____
color	1	2	3	4	5	_____

What are your top three priorities for a good working space?

1. _____
2. _____
3. _____

c. The Program Structure

You can significantly enhance the learning climate in your class by describing clearly to the group how the program is structured and what your expectations are for both them and yourself.

There is no standard way to lead a fitness class. Many of your participants will have had experience with other programs and will wonder how your approach will be unique. It is reassuring to let them know as soon as possible how you conduct your classes and how you would like them to participate. People might be wondering:

How do you come up with what you decide to do in class? Is it important to be present for the entire class? Some participants may have schedules that cause them to miss the first or last part of your class.
Will the class start and finish on time?
Does everyone have to wear running shoes?
Do we have to stay for the relaxation part at the end?
Do you have expectations about a minimum number of classes to attend each week?
Do you want everyone in the class to sign a liability certificate?

Will you be offended if I take your class once a week and someone else's once a week?
Is your program structured to encourage me to become independent of your organization or to keep me returning?

Making the format, design and rules clear can reduce people's anxiety about your expectations for their behavior thus improving the climate. When you lead your classes with each of these three facets in mind – the interpersonal, the physical and the structural, then chances are the climate you set will be positive and encouraging.

Here are some further tips for enhancing climate in your first class:

- be available to greet people and ask "get to know you" questions. Don't be late or busy preparing last minute details of the class
- introduce yourself by name and introduce people to each other, encouraging them to socialize and feel comfortable
- have some records, pamphlets or books available so that people can look through them as they wait for class to begin
- start the class in a circular or semi-circular arrangement of people so that they will feel informal and involved
- welcome everyone and introduce yourself
- give a brief outline of what you hope will happen in this class, how you see each other's role
- give participants a way to introduce themselves and get to know each other
- during initial introductions ask the group to respond to some questions verbally or by raising hands. Questions such as "How many people have been in this type of class before?" "How many of you have taken other classes offered here?" This type of question asked to the whole group can provide information for you and for the participants and can also set up a dialogue – especially if you pick up on one or two responses.

There are several ways to help people introduce themselves. What you choose depends on the size of the group and the amount of tension you sense people are feeling. As a general rule, people feel more comfortable talking to up to 4 people than introducing themselves to a group larger than 8. So you can ask people to form pairs or trios by finding one or two people they don't know. If the group is large, you can ask people to form groups of four or five to introduce themselves.

It is generally a good idea to give people some specific questions to respond to as they introduce themselves to each other. This helps provide structure that lowers anxiety and risk in the first contact.

One to three questions are about all that can be handled in such initial introductions. For example, invite people to introduce themselves and talk about:

The best classes you ever attended and why?
What you heard about classes in . . .?
What questions you have about these classes?

This last question is useful under most circumstances. It helps you find out what people want to know and enables you to talk about the classes with them instead of making a long presentation that might miss learners' concerns.

More Tips on Climate Setting:
For drop-in classes, introductions are often inappropriate except for the very first class of the season. Some drop-in groups use volunteer "spotters" who assist the instructor with technique corrections, making people feel welcome etc.

Spend about one quarter of the first class talking with participants. This may include introductions, filling out PAR-Q forms, short 1-2 minute reactions from participants after a few exercises or routines, and 5 minutes at the end for comments about the class.

Make contact with each participant before he/she leaves. This may happen through a short conversation, eye contact, a smile, a touch. In very large classes, 20-plus people, this may not be possible in the first class.

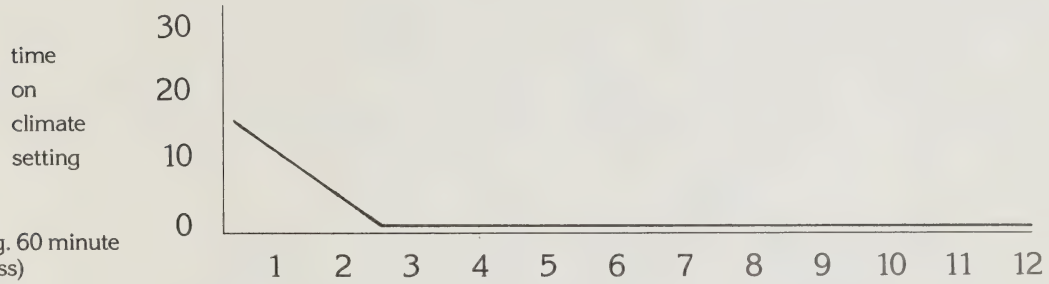
Notice anyone who seems to be shy, uncomfortable or alone. Make a mental note to initiate more contact with that person at your next class.

Choose exercises and other activities that most learners feel successful doing; in addition, try out one or two that they can look forward to achieving. Adults need to feel that they are competent and can handle the learning situation. Too much activity that they cannot do may be discouraging.

Climate setting does not stop after the first class. It remains an important part of your entire program and starts anew with each class. Every time your learners enter the class, they are moving from one climate to another. If a person has just left home, deposited children at various activities and raced through car pool duties, then that learner needs some time to adjust psychologically and physically to the new situation – your class. If someone has just come from the office after a hard day, that person is still carrying the frustration and tension of the day. It is very difficult to tune in to what your body feels if your mind is still on the report that is not completed, or the phone calls that have not been made, or whatever is being carried over from the day.

In Summary

Setting and maintaining a positive climate for learning is part of teaching every fitness class. In initial classes more time is required than during later classes.



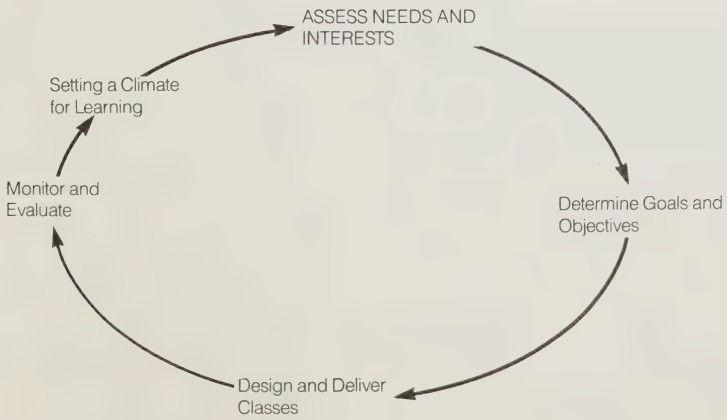
In initial classes you need to set aside more time for people to talk to you and to one another before and after class. In later classes, when people are more comfortable, this type of informal dialogue will happen more spontaneously and will be integrated with less structure.

Make a point of designing the beginning of every class so that participants can:

- react to the last class and express preferences for this class
- take the time to leave their worries behind, tune in and warm up
- interact with other participants in a casual and relaxed manner

Climate setting is time well spent in helping people to tune in to their bodies, their awareness of themselves and the other class members. It is also time that provides leaders with cues about what to focus on, who to make contact with, how to design and run the next class.

2. Assessing Needs and Interests



Assessing needs and interests involves understanding the goals of three major groups:

a. the participants in the course
b. your own
c. and those of your sponsoring organization

When you are clear about what these three players in the game want to accomplish, then it is time to set priorities.

a. Assessing Participants' Needs and Interests

Bring 30 people together to take a fitness class and you will likely have at least 15 different reasons for being there. And every one of those reasons is legitimate from the participant's point of view. The challenge is to find out what people want, how they want to get it and when they expect to have it so that you can help them get what they want or let them know whether their demands are reasonable given your objectives and those of the sponsoring organization.

Verbal discussions sometimes surface this information easily. However, in most class situations it is helpful to distribute a brief questionnaire asking participants what they want to get out of the class. Then you will be able to group their answers and get a "total" picture of the class you are working with.

TIPS:

- keep the questionnaire brief – no more than 6 or 7 questions
- bring along sharp pencils with you to make the process efficient
- report the results of the needs assessment back to the group at the class, explaining how you will bring their needs together with yours as the leader and those of the host institution to ensure a program that is in line with the organization's values, yours as a leader and theirs as participants.

Rules for Creating a Needs Assessment

1. Ask for demographic data first, e.g. name, address, phone numbers.
2. Ask questions with closed, simple answers first so that people can move gradually into answering more challenging questions.
3. Ask questions related to what people **think** before you ask them what they **feel**. Sometimes questions about feelings can be too intrusive if they are asked too soon in a questionnaire.
4. Ask questions about how people's fitness levels are in the **present** before you ask them to think about the future.
5. Avoid making assumptions about **what** people want. Instead of asking what type of music they like to move to, you might ask them **if** they like to move to music.
6. Legitimize people's backgrounds and needs. Those who are attending their first organized class should feel as welcome as those who have a lot of experience.
7. Near the end of the questionnaire ask people what their personal goals are for the course so that they will start to feel responsible for how they choose to participate.
8. End on a positive note, welcoming people to the program and encouraging them to fulfill their own goals.

The sample needs assessment shown here can be used for most general fitness classes.

A Sample Needs Assessment

WELCOME

Name: _____

Address: _____

Phone Number(s): _____

I would like to design our time together so that it suits your needs as much as possible. You can assist me greatly by taking time to answer the following questions.

Thank you!

1. Have you been involved in other physical activity courses? If "yes", please describe briefly.

_____

_____

2. How did you decide to enrol in this course?

_____

_____

3. This course uses music to accompany activity. Do you have a preference for a particular style of music? _____ Please comment.

_____

_____

4. What are the most important qualities for you in a fitness leader?

_____

_____

5. What is the one thing that you would like to accomplish most in this course?

_____

_____

Welcome to the program! _____

Screening and Appraisal

i. Screening

About ten percent of the people who enrol in fitness classes should see a medical person and get further advice about the types of activity that suit them best before they actively participate. The Physical Activity Readiness Questionnaire helps these people to self-select themselves into further counselling about exercise and lifestyle change.

It is important to introduce the questionnaire with a few comments that emphasize the importance of screening in preventing injuries or aggravating existing problems. If you treat this questionnaire with respect chances are that your participants will also answer the questions thoughtfully and truthfully.

ii. Appraisal[36]

Fitness appraisals take many forms, ranging from the extensive and detailed evaluation of an elite athlete to the mass testing of a fitness class. A general fitness appraisal is sufficient for most people; it is a moderately priced, personalized assessment and interpretation of an individual's fitness level.

An appraisal consists of three stages:

1. The **assessment** of the client's fitness goals and the problems perceived to be blocking the attainment of these goals.
2. The collection of data and the **interpretation** of results.
3. The development of a realistic **action plan** that accounts for client's goals, present fitness level, and lifestyle.

With its emphasis on total lifestyle assessment and not only physical fitness measurement, the appraisal can play a number of roles in a fitness program, including:

1. Establishing baseline data for developing an exercise program through identification of a client's fitness strengths and weaknesses. This data is important in establishing realistic fitness goals and developing an effective work plan.
2. Evaluating the effectiveness of a current fitness program by providing measures of physical fitness that can be regularly compared. Fitness goals can be reformulated, and exercise programs modified according to the measured changes in fitness. A "once-only" fitness test provides few practical benefits to a client other than establishing baseline norms.

SCREENING

3. Serving as an educational process through which a client gains a better understanding of the human body. An appraisal provides an ideal opportunity for a client to reflect on such items as personal habits, stress and physical activity, alcohol consumption, tobacco and drug use, and eating patterns. Throughout the appraisal, the client and the appraiser can discuss how the client's attitudes influence lifestyle, and how fitness can be improved by modifying personal habits.
4. Motivating the client to maintain a regular fitness program, by setting realistic lifestyle goals that can be attained within a reasonable timeframe.

The data collected during an appraisal usually consists of:
a. a lifestyle questionnaire related to the client's activity patterns, preferences and goals
b. measures of cardiorespiratory fitness, body composition, muscular strength, endurance and flexibility.

As a fitness leader you are one part of a resource team available to assist your clients in reaching their fitness goals. In addition to developing a safe, effective fitness program, you can educate your clients to better understand their bodies, so that they can take more responsibility for personal health and fitness. This may involve an emphasis on body awareness skills or education about self-testing systems.

You can also encourage clients to think about an appraisal when they first join your program and suggest appropriate places in your community to do so. Take some time to find out who in your class has undergone an appraisal, and discuss how this went and what their results were. This will provide an opportunity for you to suggest additional exercises to help them work on any fitness component that may have been low.

An appraisal also provides another evaluation method of your clients' starting fitness levels, and monitors their progress. Comparing pre and post results gives you an additional aspect to consider when evaluating the effectiveness of your program.

b. Assessing Your Own Needs and Interests

To understand what you want to get out of teaching a class takes a little reflection. Think of your ideal fitness class again. Imagine that you are the leader.

1. What do you want most out of working with this group?

2. What is one new approach, technique, piece of music, planning system that you could try with this class?

3. When will you reassess how you are doing with this group?

4. How will you know if you have been successful?

c. Assessing the Needs and Interests of the Sponsoring Organization

Whether they are formally stated or not, every organization has values about fitness that it wants inbred in its classes. Think of a fitness organization that you know fairly well.
1. What are the fitness-related goals of this organization. (If you are self-employed, describe the goals you have for your fitness classes.)

2. In what specific ways does this sponsoring organization expect you to follow through on their values as you teach their classes?

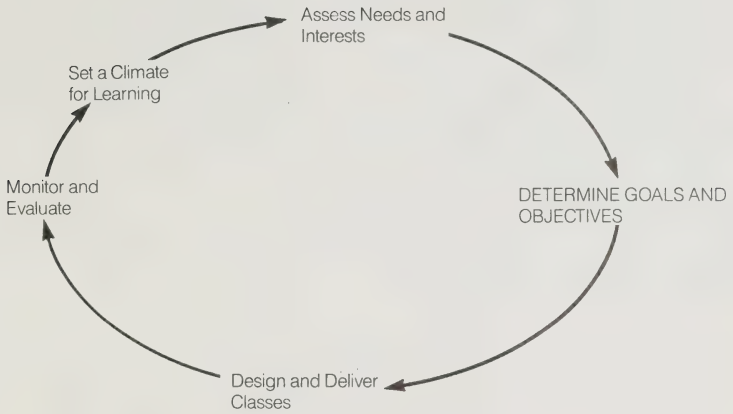
When you put these three sets of needs and interests together, you can see how complex the planning part of teaching classes can be. There are three basic questions to ask once you have this information:

1. In what ways are these three sets of needs and interests similar?

2. In what ways are they different?

3. What major priorities are emerging as common to all three groups?

3. Determining Goals and Objectives



a. Setting Goals

Once you have completed the needs assessment, the priorities that are common to all three groups emerge and then it is time to set your goals. This can take as little or as much time as you like. Most leaders already know at least at an intuitive level what their own priorities and those of their sponsoring organization are so the next step is simply to write them as goals.

Goals[37] are the broad, general statements that describe what your overall intentions are. They translate your priorities into action. The actual writing of the goals is an important process – it clarifies your thinking and opens up new ways of reflecting on what you do as a leader. Write each of your priorities as a goal statement, beginning with an infinitive, i.e. "to" plus an action word.

Sample Goal Statements:

To improve my abilities to work with music.
To use circuit training as a part of the total program.
To integrate educational information about stress management into the program.

Goals Checklist:

_____ Is it based on a single priority?
_____ Does it describe what you intend to do?
_____ Is it written as a broad, encompassing statement?
_____ Is it easy to understand?
_____ Will accomplishing this goal make you a better fitness leader?

Think about your ideal fitness class. What are your top three goals?

1. _____
2. _____
3. _____

b. Setting Objectives

Objectives provide the specific directions that make your goal statements a reality. Like goals, objectives also begin with infinitives and describe clearly and concisely what you want to accomplish; they outline **WHAT** you will do, **HOW** you will do it and **WHEN** you will accomplish it.

Sample Objectives

Goal:

To improve my abilities to work with music.

Objectives:

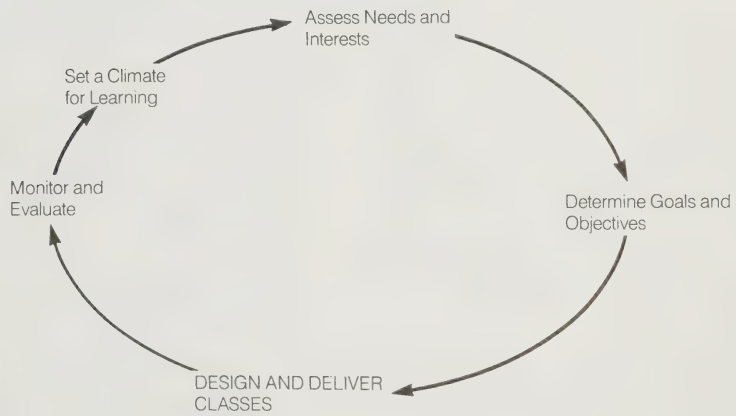
To attend the FOLP specialties workshop on Music within the next three months.
To start counting phrases out load starting with my next class.
To ask for music selections from participants during the third week of class.
To exchange music tips with two other leaders in our organization within the next two weeks.

Objectives Checklist:

_____ Are they specific statements that include the end results you want?
_____ Do they describe clearly **WHAT** will be done, **HOW** it will be measured and **WHEN** it will be accomplished?
_____ Do they relate directly to the goal they are with?
_____ Are they easy to understand?
_____ Do they include by inference all of your intended action steps?
_____ Are they challenging?
_____ Are they realistic?

It is very tempting to forget about setting goals and objectives and to get caught in the rut of simply doing classes. Leaders who complain about "burning out" often describe their impatience with doing the same thing every class and not feeling that they get anything for themselves out of their classes. Setting goals and objectives can take as little as 15 minutes and can provide you with stimulus for your own professional development as well as an improved awareness of what will make your classes an exceptional experience for your participants.

4. Designing and Delivering Classes

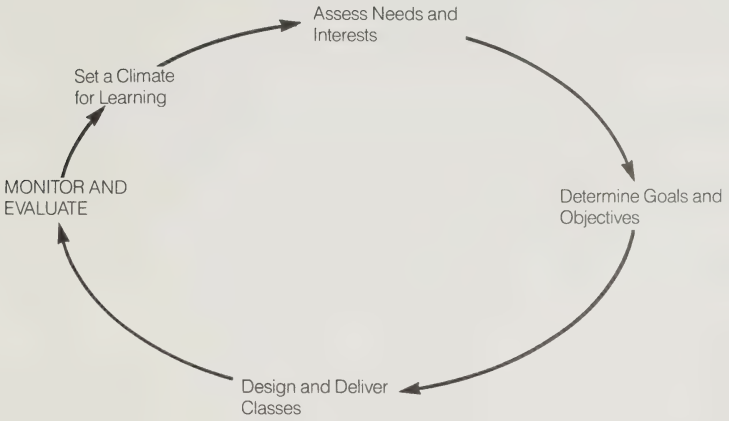


The actual teaching of classes is where your goals and objectives are tested in reality. This is where you bring together all of the information and skills you have related to leading classes and hope that it fits together well for the benefit of your participants. The following tips may help maintain your awareness of how this step links into the total program planning model.

TIPS

- keep a log of what you do in each class so that you will be aware of how the group is progressing and what you can plan for next
- write down how you are progressing in relation to the goals and objectives you set for this particular class
- at the end of every three months, make a list of what you would like to change and what you want to do the same as the next quarter approaches
- make a commitment with another leader to meet three times a year to discuss mutual areas of interest in fitness leadership. Keep notes during your meeting to organize your discussions and help you remain aware of how this meeting could feed into the creation of the next quarter's goals and objectives
- use the "Developmental Design" process outlined in the second half of this Unit to monitor how your group is progressing

5. Monitoring and Evaluating the Program



Monitoring is the ongoing process that asks the question: How are we doing? In fitness leadership this question applies to all three parties involved in the needs assessment – you, the participants, and the sponsoring organization. As a leader, you will need to find out whether you are meeting the needs of the participants and the organization employing you; the participants will want to monitor whether they are accomplishing what they set out to do; the organization involved has an interest in discovering whether its values are being acted upon in a competent and safe manner. The word "monitoring" implies that these questions are asked while the program is still in progress; "evaluation" implies that the program is completed and some conclusions and recommendations are warranted. The following forms and suggestions may be helpful in assisting you in the design of your own monitoring system.

a. Monitoring

TIPS

- make a self-contract (sample follows) for monitoring the objectives you set for this particular class. Ask another leader to do the same thing and then share your progress reports.

Sample Progress Report for Fitness Class Planning Objectives

Date: _____ Leader: _____ Class: _____

Goal: _____

Objectives: _____

Progress made this month: _____

Problems encountered: _____

Changes in priorities: _____

Type of assistance needed: _____

Comments: _____

Create a variety of brief and interesting ways to find out how people are feeling about the program:

- Ask people specific questions about how the class is going for them.

e.g. Are you getting the kind of workout you expected?
Would you prefer a longer or shorter class?
Do you like moving to this type of music?
Would you prefer to have the music louder or softer?

- Give people quick feedback forms that only take a minute to fill out.

On a scale of 1 (low) to 10 (high) how would you rate this class in terms of its success for you? _____ Please jot down one reason for your choice of number.

_____

_____

_____

What do you like most about this class?
What do you like least about this class?
What changes would you make if you were the leader?

Assume that you had the power (and you do!) to make this into the ideal fitness class for you. What changes would you make?

_____

What would you leave the same? _____

_____

_____

What are the first three words that come to mind when you think about this class? _____

_____

Please explain your choice of words. _____

_____

_____

- Ask your supervisor to participate in one of your classes and spend some time discussing it with you afterwards.

- Use the "Developmental Design" process outlined in the next part of this Unit to monitor how people are progressing.

b. Evaluation

The two main questions to ask before making up your evaluation system are:

1. What do I want to find out?
2. What is the most effective way to find it out?

Your method choices include:

verbal
- one-on-one discussion in person or on the phone
- focus groups of 4 or 5 people talking about the class for one hour or so
- large group discussions

written
- questionnaires
- solicited letters of comment

The following sample questions and evaluation form are intended to provide some options for your decisions about evaluation.

Sample Questions:

1a. What did you want most when you first decided to take this course?
1b. What other goals emerged throughout the course?
1c. How successful were you in fulfilling the goals you have described in parts a and b?
2. If you were the leader of this fitness class, how would you change this course?
3. What are your plans for maintaining your fitness activity level now that this program is finishing?
4. Please comment on the following aspects of this class:

Select the questions that will get you the information you want. You may wish to group similar items e.g. facility, staff, etc.

Item	**Rating** low				high	**Comments**
organization	1	2	3	4	5	
facility cleanliness	1	2	3	4	5	
air circulation	1	2	3	4	5	
heating/air conditioning	1	2	3	4	5	
convenience	1	2	3	4	5	
privacy	1	2	3	4	5	
lighting	1	2	3	4	5	
changing area	1	2	3	4	5	
floor	1	2	3	4	5	
security	1	2	3	4	5	
instructor suitability	1	2	3	4	5	
sound system	1	2	3	4	5	
class size	1	2	3	4	5	

Sample Fitness Course Evaluation

Date: _____ Instructor: _____

Course Location: _____

1. Overall, I would rate this course as

1	2	3	4	5	6	7
poor						excellent

because _____

2. My favorite part of this course was _____

3. I think this course would be improved if _____

4. The three most important things for me in a fitness instructor are:

1st _____

2nd _____

3rd _____

4. Continued
I would rate our instructor on these as:

1st	low						high
	1	2	3	4	5	6	7
2nd	low						high
	1	2	3	4	5	6	7
3rd	low						high
	1	2	3	4	5	6	7

5. Other Comments:

Name (Optional): _____

Evaluation is both an end and a beginning and as such is the linking point between the past and how it can impact on the future.

The third part of this Unit describes a way to successfully implement this program planning model on an ongoing basis. This approach – called Developmental Design – emphasizes how physical fitness can pave the way towards a **holistic** approach to personal change and development.

II. Developmental Design[38]

Experienced fitness leaders know how difficult it can be to retain the larger holistic focus of working with the "total" person in classes; the temptation is to work only with the physical – to provide the appropriate exercises and routines and then watch the physical fitness levels change. But people bring more than their physical selves to class – they bring their minds and emotions and elusive spirits too, as well as whatever living arrangements they are currently involved with – family and friends as well as needs, interests and values. And what they bring that seems to stand out most of all is the need to develop as a person – they want to make progress and to have the feeling that their group is progressing too.

1. A Three-Way Focus

Developmental Design provides you with a way to plan your classes so that they are part of a program with a focus on a group that develops and individuals that change and meet their goals along the way. As well, it provides you as a leader with a way to set your own goals for professional development by asking you to reflect on how you are meeting your own needs and the needs of your participants within the cycle of a program.

Thus, Developmental Design has a three-way focus:

1. **KNOW YOUR PARTICIPANTS** and how to work with them as individuals
2. **KNOW YOUR GROUP** and how to plan a program of classes that will encourage its growth
3. **KNOW YOURSELF** and how to satisfy your own professional development needs

This kind of "knowing" is closely related to the idea of Praxis (theory/values into action). You will need to reflect a great deal on how you are and have been in order to translate your values into ethical action as a leader. It will take a similar emphasis on reflection to apply the technical or physiological aspects of becoming a leader into a holistic approach that suits your style.

2. Four Continua

Here's how it works. You look at your classes and participants as they are developing along four continua:

1. Physical Fitness – where the emphasis is on the "big five" components: cardiovascular endurance, muscular strength, muscular endurance, flexibility and balance and coordination.

1	2	3	4	5
beginner				advanced

2. Body Awareness – where the emphasis is on the level of participants' awareness of the proper placement of their bodies for exercise and daily living.

1	2	3	4	5
beginner				advanced

3. Mental Focus – where the emphasis is on the quality and degree of mental involvement in fitness activities.

1	2	3	4	5
beginner				advanced

4. Sense of Self – where the emphasis is on opportunities for self acceptance and personal achievement in a fitness class.

1	2	3	4	5
beginner				advanced

Once you have a feeling for what these four developmental challenges are about, then you use them to analyze or clarify where a class is at so that you can decide on what your program options are.

For example, let's say that one of your current classes is an advanced group where you are having difficulty coming up with enough challenges to keep them excited about the program. This class has an excellent level of physical fitness; however, their level of body awareness is very low – they have been working on the physical side so much that they have spent very little time getting to know their bodies well enough to do even basic isolations. As well, their mental focus in class is minimal because they are so adept physically that they can do all the work with minimal concentration. Their "sense of self" is about medium – they are comfortable with their familiar routines but they haven't tried many new or challenging patterns in a long time.

When you've analyzed the class in this way, and put the planning problem in this framework, then solutions begin to suggest themselves: maintain the level of physical fitness while introducing body isolations and other awareness activities; raise the degree of difficulty in exercise patterns to increase their mental focus; challenge them with becoming more spontaneous and working towards significant long range goals to work on sense of self.

The next few pages outline these four developmental challenges in detail so that you can think about how to use them in your own classes. Our focus is on an end-product that Isadora Duncan once described so beautifully:

"I live in my body like a spirit in a cloud".

Physical Fitness (body)	1	2	3	4 X	5
	beginner				advanced
Body Awareness (body/mind)	1 X	2	3	4	5
	beginner				advanced
Mental Focus (mind)	1	2 X	3	4	5
	beginner				advanced
Sense of Self (spirit)	1	2	3 X	4	5
	beginner				advanced

3. Using the Developmental Design Method

The following four sections list the factors involved in each of the four challenges, both for individuals and for classes as a whole. These lists are essentially diagnostic tools. By comparing the performance, attitudes, and capabilities of your own participants to the list descriptions, you can make an assessment of how far they've come along each challenge line.

How do you make the assessment? Use your eyes and your ears, and all your leader's intuition. Watch how people perform in class, how they relate and respond to the music, to the exercises, to their own bodies, to each other, to you. It's especially important to talk to people, to get feedback from them and an idea of their feelings, attitudes, and knowledge. And remember, the method of Developmental Design is essentially subjective. Its aim is not to give you technically precise measurements of development along each continuum, but rather to refine your own sensitivity to the needs and potential for growth of your participants, and to suggest ways of helping people to move in those directions.

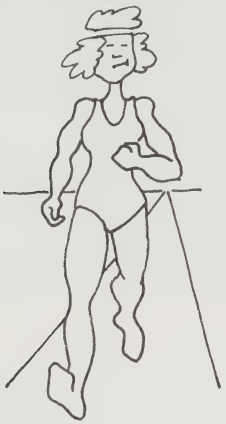
With each of the four sections is a set of teaching tips that apply to each of the challenges.

At the end of this Unit you'll find a two-page evaluation and planning form. It is designed to be copied. The first page is for your observations. It contains four scales on which you can mark your assessments, just as was done in the example above. Spaces provided for comments allow you to keep track of the factors which contributed to your assessment.

The second page is for planning. It also contains four scales, on which you mark the point you'd like to see your class or participant reach in eight weeks. Spaces provided for comments allow you to keep track of the techniques you'll use, and the changes and additions you'll make to your program.

Challenge #1: Physical Fitness

Emphasis: The "big five" components of physical fitness: (1) cardiovascular endurance, (2) flexibility, (3) muscular strength, and (4) muscular endurance, as well as (5) balance and coordination.



Challenge #2: Body Awareness

Emphasis: The level of participants' awareness of the proper placement of their bodies for exercise and daily living, i.e. can they move major muscle groups in isolation of others; do they understand the importance of the pelvic tilt in doing situps?

Challenge #3: Mental Focus

Emphasis: The quality and degree of mental involvement in fitness activities, i.e. are participants attending completely in a relaxed way to what they are doing physically or are they still worrying about other parts of their lives?

Challenge #4: Sense of Self

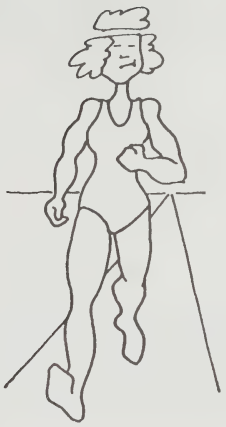
Emphasis: Opportunities for self acceptance and personal achievement in a fitness class.
"Body acceptance leads to body exploration.
Body exploration leads to body knowledge.
Body knowledge leads to body care.
Body care leads to good health and enjoyment."[39]

Challenge #1: Physical Fitness

Emphasis: The "big five" components of physical fitness: (1) cardiovascular endurance, (2) flexibility, (3) muscular strength, and (4) muscular endurance, as well as (5) balance and coordination.

What to Look For In an Individual

Think of a participant in one of your classes – someone who stands out clearly in your mind. Read the points below describing the limits of this continuum and then place an "X" to mark where you would place this participant when you think of his/her level of physical fitness.



Physical Fitness

1	2	3	4	5
beginner				advanced

- has a poor body image and complains about physical problems such as weight, smoking, lack of energy
- does minimal number of exercise; does not complete all of them
- may have difficulty keeping up to others in the class
- is dissatisfied with his/her range of motion and needs greater flexibility to feel comfortable in daily activities; sees improvement in flexibility as almost impossible
- does not enjoy tricky foot or arm work; feels uncomfortable balancing
- experiences sore muscles and joints between workouts; does not know how to adapt the pace to reduce stiffness; tries to overdo it

- rarely breathless; participates enthusiastically; likes feeling strong physically and shows it; challenges the leader to set a brisk pace
- often does extra sets of exercise
- can maintain the class pace and will often do more than asked
- is comfortable with the range of motion at major joints and with flexibility in general; can see progress in joint flexibility over a few classes
- moves comfortably through activities that require simple coordination; likes the challenge of working with balance and coordination
- experiences a minimum of soreness between workouts; knows how to adapt the workout to suit how he/she is feeling; does not usually overdo it

What to Look For In a Class

Think of the entire class in which this person participates. Read the questions below that ask you to think about how this class meets the "Physical Fitness" challenge and then place an "X" to mark where you think this group would fit on the continuum

Physical Fitness

1 beginner 2 3 4 5 advanced

1. Pace:
   Do people seem comfortable with the overall pace of the class?
   i.e. Do you notice a lot of people slowing down or pausing momentarily to catch their breath or do most participants seem to be able to keep up? How are people measuring up on target heart rates? Does the class seem too long or too short to you?

2. Sets and reps:
   Do participants seem comfortable with the number of repetitions of each exercise that you are suggesting?
   i.e. Are they doing extra sets of exercises on their own?
   Are they overwhelmed by how many you can do?

3. Feedback:
   What sort of feedback are you getting about how people feel about your classes?
   i.e. Do they give you any specific feedback about the level of difficulty of the class for them?
   Do they complain about sore muscles and stiffness, about feeling unable to work as hard as others?
   Do they ask you to work harder on certain areas and less on others?

Where would you like this class to be on this continuum in 8 weeks time? Put a check mark to indicate this point on the above continuum. Keep in mind that the needs and interests of the participants may not be to increase their fitness levels – it may be to maintain them and this is fine!

Encouraging Group Development

Part A: What can you do to ensure that this group reaches their 8-week goal point? Jot down specific items such as increasing the number of situps in order to raise abdominal strength or lengthening the aerobic period to improve cardiovascular efficiency.

_____

_____

_____

_____

_____

_____

_____

Part B: Teaching tips to help people and classes meet the challenge of physical fitness:

i. Keep track of individual and group progress in easy-to-measure areas such as strength and flexibility and make comments about how people are progressing.

ii. Be sure that your classes have both "satisfiers" (short term achievements) and "motivators" (long term goals) built into your design.

iii. Legitimize sweating and other indicators of hard work.

iv. Comment on people who have good posture in class – refer to the importance of good spinal alignment in the total picture of good health.

v. Encourage people to notice their physical responses to activity and how they change as they improve their fitness levels. Make a game out of "outguessing" the fitness test – e.g. "How do you think you'll do on the flexibility measurement this time?"

vi. Share the leadership e.g. ask participants to design more advanced ways to do an exercise; create learning partners; match up a newcomer with an experienced participant.

vii. Encourage participants to take responsibility for their own muscle soreness and/or stiffness after a class. Ask them to pace themselves so that this does not happen.

viii. Confirm that it is "OK" to breathe heavily during strenuous activity – allow yourself to puff and pant when you feel like it instead of maintaining the "ideal" fitness leader image of someone who is never out of breath!

Challenge #2: Body Awareness

Emphasis: The level of participants' awareness of the proper placement of their bodies for exercise and daily living.

What to Look for in an Individual

Think of a participant in one of your classes – someone who stands out clearly in your mind. Read the points below describing the limits of this continuum and then place an "X" to mark where you would position this participant when you think of his/her level of body awareness.

Body Awareness

1 2 3 4 5

beginner advanced

- has poor posture when standing, sitting, lying down and moving and is unaware of its importance in total health

- shows improper positioning for specific movements, e.g. no pelvic tilt in situps, overarch of the back in prone position; does not keep knees over the centres of feet in bent-knee position

- does not understand why certain exercises are contraindicated; does not have a thoughtful approach to understanding the whys and wherefores of physical movement, e.g. will overarch the back; hyperextend neck, arms legs; will do situps with feet held down

- does not understand the importance of being able to do body isolations, of being able to move muscles by themselves and how this improves awareness of all aspects of how the body moves

- has excellent posture when standing, sitting, lying down and moving and is aware of the link between postural awareness and total health

- shows proper positioning for specific movements and understands why this is important. Basic positions have become automatic (e.g. pelvic tilt, knees over the centres of feet) as a result of constant practice

- has a good understanding of why certain exercises can be harmful and knows the limitations of his/her body. Will not knowingly hyperextend joints or do movements incorrectly, e.g. avoids hyperextension, overarching etc.

- understands and appreciates the importance of being able to do body isolations. Can isolate the major body parts: feet, calves, thighs, hips, ribs, shoulders, head and neck, arms, hands and enjoys these exercises

What to Look for in a Class

Think of the entire class in which this person participates. Read the questions below that ask you to think about how this class meets the "Body Awareness" challenge and then place an "X" to mark where you think this class would fit on the continuum.

Body Awareness

1 2 3 4 5

beginner advanced

1. Gross Motor Awareness: Do participants seem conscious of proper positioning for situps, knee bends, arches, etc.? Do they have an awareness of their bodies as wholes and their positions in space?–(e.g. bumping into people; using complete range of motion; celebrating how physical they can be)–How would you rate the posture of the group as a whole? How adept is the group at doing body isolations?

2. Fine Motor Awareness: Do participants use smaller parts of their bodies such as hands, fingers, wrists, feet, ankles, toes, head, neck, etc. to accentuate their movements? Do participants pick up your own finer movements and incorporate them in their movements? Do they ask questions about the finer points of what you are doing – e.g. is your pelvis tilted or are your thighs tensed or relaxed?

3. Physical Listening: Do group members attend to what is going on in their bodies – do they comment on how they feel a certain movement? Do they take the time to actually feel the movements they are doing or are they over-focused on the results of the movement? Are they doing exercises and routines for the fun of feeling them?

Where would you like this class to be on this continuum in 8 weeks time? Put a check mark to indicate this point on the above continuum.

Encouraging Group Development

Part A: What can you do to ensure that this group reaches their 8-week goal point? Jot down specific items such as teaching hip isolations and proper posture or increasing the length of the cooldown/ relaxation period or asking more questions related to body awareness.

_____

_____

_____

_____

_____

_____

Part B: Teaching tips to help promote the development of body awareness:

i) Teach participants how to take care of themselves in fitness classes – e.g. why and when to avoid straight-leg situps, etc. Encourage the concept of medical self-care.

ii) Teach awareness skills such as body isolations in order to build expertise in moving body parts in isolation – e.g. teach them to feel the intercostal muscles around their ribs.

iii) Encourage attention to the details of movements – e.g. "What did you notice when you did that?"

iv) Focus on breathing patterns during movement. Do people exhale with the effort? Do they hold their breath?

v) Give "homework" on muscle awareness. Ask participants to relax all their muscles every time they see a green traffic light or a picture of their favorite movie/TV star.

Challenge #3: Mental Focus

Emphasis: The quality and degree of mental involvement in fitness activities, i.e. are participants attending completely in a relaxed way to what they are doing physically or are they still worrying about other parts of their lives?

What to Look for in an Individual

Think of a participant in one of your classes – someone who stands out clearly in your mind. Read the points below describing the limits of this continuum and then place an "X" to mark where you would position this participant when you think of his/her level of body awareness.

Mental Focus

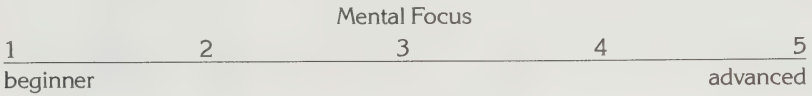
1 2 3 4 5

beginner advanced

- is concerned with the mastery of the basic exercise; is not comfortable enough yet to concentrate on the feelings of body and mind in motion
- looks awkward and ill-at-ease while learning a new sequence; seems to over-concentrate
- experiences difficulty relaxing into the physical experience of the class; the workout is just another thing that has to be done. Other cares/worries are still present
- tends to "follow" others in the class, thus reducing tension of learning all the movements well
- does not see the connection between concentration inside and outside the fitness class; of how this skill transfers into daily life
- seems relaxed and involved in enjoying the workout as a pleasurable end in itself. Other cares/worries are temporarily suspended
- understands and appreciates how concentration is a skill that transfers into other areas of life
- seems focused on getting the most out of the class experience; feels the movements everywhere; often experiences the music intensely; can become completely engrossed in the experience
- looks comfortable and confident while learning a new sequence; can concentrate in a relaxed and yet intensive fashion
- tends to "lead" others in the class, sharing know-how about movements and patterns

What to Look for in a Class

Think of the entire class in which this person participates. Read the questions below that ask you to think how this class meets the challenge of "Mental Focus" and then place an "X" to mark where you think this class would fit on the continuum now.



1. Degree of Involvement:
Are your participants involved mentally in your classes as much as physically? Do participants seem involved in more than just the structure of doing some exercises – do they have a sense of the feeling involved in playing in an exercise class? Do you feel that the group is working out with you and enjoying it or that they are just doing their exercises?
2. Ability to Focus:
How well do group members focus on learning new patterns and rhythms? Do you feel that you have their complete attention or that they are often thinking or worrying about other things? Do participants ask questions about the proper way to do specific exercises? Are they interested in why you do certain things and not others?
Where would you like this class to be on this continuum in 8 weeks time? Put a check mark to indicate this point on the above continuum.

Encouraging Group Development

Part A: What can you do to ensure that this group reaches their 8-week goal point? Jot down specific items such as teaching more complicated situp patterns to encourage their attention spans or calling attention to the feelings involved in certain movements.

_____
_____
_____
_____
_____
_____

_____
_____
_____
_____

Part B: Teaching tips to help promote mental focus.
i) Make comments in class about how the ability to concentrate on learning a pattern can transfer into improved concentration in other aspects of life, e.g. in bed.
ii) Build your warmup into a 4-6 minute pattern that participants can learn and repeat by heart without additional instructions from you. Encourage them whenever possible to become less dependent on you for "follow-the-leader activities."
iii) Challenge their abilities to concentrate by asking them to double the number of counts in a pattern and then letting them do it themselves, with you at the back of the class. Leading from behind often provides a new way to learn for both you and the participants.
iv) Give people lots of encouragement for interpreting movements and music according to how they feel – give points for mistakes, for becoming so wrapped up in what you are doing that you lose count.
v) Present patterns and rhythms as one step further along the developmental pathway for learning how to concentrate in a fitness class.
Or as one anonymous poet put it:

"The centipede was happy quite
Until the frog in fun
Said, pray, which leg comes after which?
This set his mind in such a pitch
He lay distracted in a ditch
Figuring how to run."

Challenge #4: Sense of Self

Emphasis: Opportunities for self acceptance and personal achievement in a fitness class.

What to Look for in an Individual

Think of a participant in one of your classes – someone who stands out clearly in your mind. Read the points below describing the limits of this continuum and then place an "X" to mark where you would position this participant when you think of how well developed his/her sense of self is.

Sense of Self

1 2 3 4 5

beginner advanced

- narrow range of motion for most movements
- is self-conscious in class, seems to expect mistakes and then is embarrassed by them
- concentrates too hard on getting things "right" instead of flowing with the movement
- is controlled from the outside, as if trying to conform to some ideal way of moving
- body signature (i.e. how the person signs him/herself physically) is not clearly and comfortably defined yet
- does not feel successful yet in class – still searching for a sense of achievement
- has a sense of how to "flow" with the movement; can grasp the overall feeling of a sequence and move with it
- has a sense of how he/she would like to move and explores ways of doing this which may be different from the leader's approach
- body signature is mature and well developed and seems to be evolving further as new skills and feelings are integrated
- feels a sense of personal achievement from attending the class, of goals being met and new ones set
- generous range of motion when appropriate
- seems confident in class, accepts mistakes as part of the learning process

What to Look for in a Class

Think of the entire class in which this person participates. Read the questions below that ask you to think how this class meets the challenge of "Sense of Self" and then place an "X" to mark where you think this class would fit on the continuum now.

Sense of Self

1 2 3 4 5

beginner advanced

1. Self Acceptance:
Do people seem comfortable with themselves physically and emotionally – do they strike you as a fairly mature lot?
Is there two-way communication between you and the group and within the group itself about current issues of the day or how the class is run or what their needs and interests are for the class?
Does this class have a personality that you can describe – are they rowdy, quiet, neutral, feisty, bubbly, assertive etc.?
2. Personal Achievement:
Do participants know what they want to achieve by attending their classes? How do you work with them to ensure that they meet their goals? How would you know if someone achieved a major goal? Do you have a tradition of celebrating personal success?
Where would you like this class to be on this continuum in 8 weeks time? Put a check mark to indicate this point on the above continuum.

Encouraging Group Development

Part A: What can you do to ensure that this group reaches their 8-week goal point? Jot down some specific items such as increasing the amount of specific and constructive feedback to people on the progress you have noted, or singling out specific individuals to discuss their personal goals for the class.

Part B: Teaching tips to help promote improved self concept.
i) Design exercises and patterns that will provide participants with an experience of immediate success.
ii) Use positive feedback judiciously – actively look for opportunities to comment on significant changes in how people are moving.
iii) Encourage spontaneity in your programs by praising attempts at originality in interpreting movements, e.g. if someone uses a new arm movement, copy it and teach it to the rest of the class.
iv) When giving constructive criticism, make it to the group as a whole initially; when you feel more comfortable and you have developed a trusting relationship, use individual comments to help

people in specific areas.
v) Reward individuals who work at developing their own style of doing things; encourage them to innovate.
vi) Encourage people to sense the feel of a movement and then to develop the feeling within themselves, e.g. "This is going to be an aggressive running movement. What can you do to develop that feeling?"
vii) Confirm the richness of different ways of moving – celebrate differences! Comment on the different body signatures in the class and how each is legitimate in its own way. Use the Fosbury Flop as an example of how one person changed the way the high jump was done by going over backwards. How can they add their own personal signatures to what they do in class?

When you put these four continua together for this participant and/or this class, you end up with a profile of the person and the group that gives you suggestions for what you can plan next to ensure that they reach their goals. Most of us already do this on an intuitive level – we look at a class and think about ways to continue challenging the participants so that they will continue to get what they want. The Developmental Design approach simply puts this program planning process in an organized framework to make it easy to use.

4. Developmental Design Worksheets

a. Observations

Class or Participant: _____

Date of Evaluation: _____

Mark an "X" on each scale at the point which you feel best reflects the development of the class/participant. Use the "comments" section below each scale to record those factors which played an important role in your assessment.

Physical Fitness 1 2 3 4 5

Comments: _____

Body Awareness 1 2 3 4 5

Comments: _____

Mental Focus 1 2 3 4 5

Comments: _____

Sense of Self 1 2 3 4 5

Comments: _____

b. Looking Ahead

Class or Participant: _____
Date of Evaluation: _____

Mark an "X" on each scale at the point which you feel best reflects the development of the class/participant. Use the "comments" section below each scale to record those factors which played an important role in your assessment.

Physical Fitness 1 2 3 4 5

Comments: _____

Body Awareness 1 2 3 4 5

Comments: _____

Mental Focus 1 2 3 4 5

Comments: _____

Sense of Self 1 2 3 4 5

Comments: _____

5. Professional Development

Developmental Design also provides leaders with a way to think about their own professional development needs. There are two ways to do this. First, you can use the method to assess yourself and to plan new directions in your own development. Take a minute to think of your own skills and growth in relation to the four challenges. Place an "X" where you see yourself now and a check mark where you would like to see yourself in three months. Then list some small steps you can take to make these goals become a reality. Be sure to think about yourself vis-a-vis your peers and role models in fitness. You might mark yourself a "3" in physical fitness whereas your participants might describe you as a "5". Keep your subjective opinion foremost; you know best what's best for you.

Second, you can keep track of the assessments you make of your classes and participants, as these reflect on your own skills. For instance, if most of your classes turn out to be somewhat weak in body awareness, this very likely indicates that body awareness is an area into which you have to put some work, either by improving your teaching skills, or by improving your own body awareness. Developmental Design can give you a new set of

eyes for looking at your role as a fitness leader – it brings together you, the individuals you work with and the group itself in a single framework that adheres to the principles of fitness training and yet also offers the opportunity for personal growth in a holistic manner.

III. Where to from Here?

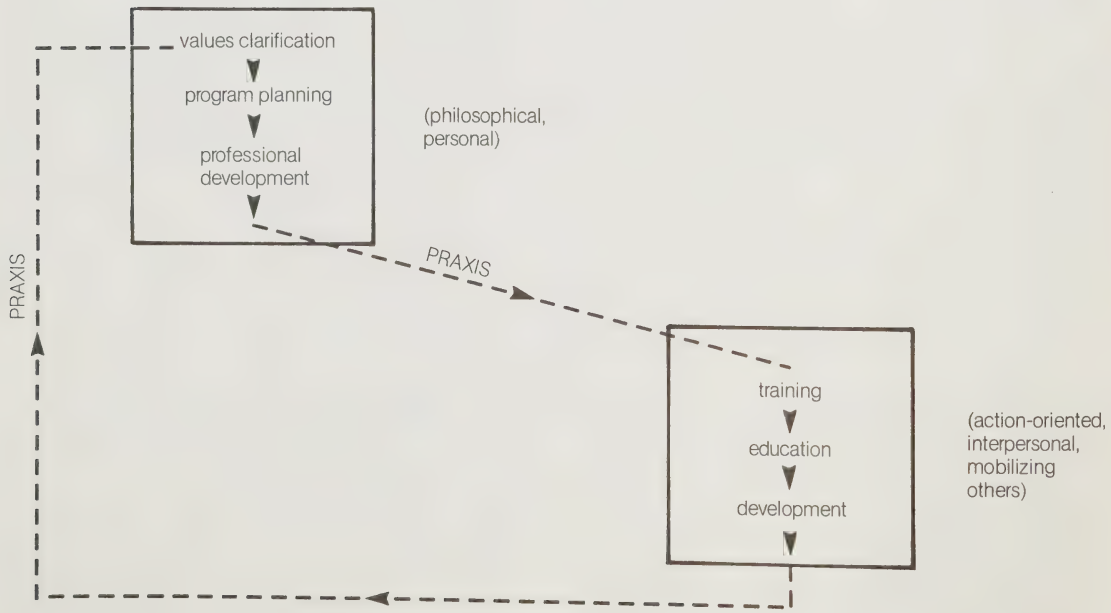
Although it is important to be aware of how to create programs and also how to use techniques like Developmental Design, sooner or later it becomes obvious that the most important element in successful program planning depends on your willingness as the person doing the planning to apply all these ideas in your own development as a leader. As the Preface to this book states: "Becoming a fitness leader involves a significant transition from . . . theory into practice." And that process takes a lot of time and energy!

The Developmental Design concept sums this up rather well. For just as you are beginning to rate yourself as a 4 or 5 on one of the four scales, you discover something new and are delighted to bring your rating back down to a 1 or 2 because you have uncovered a new area for learning where you can begin again with the Basics.

The American poet, Theodore Roethke, described himself as a "Beginner, Perpetual Beginner." As a fitness leader, you may well be finishing this BASICS course, but, in essence, you are also embarking on a new set of beginnings that will inevitably bring you back to the BASICS, to the concept of Praxis and the values that you can translate into action in the field.

Unit One introduced the concept of "Praxis" or theory into action and talked about the importance of leaders thoughtfully reflecting on what their values were for fitness leadership prior to acting upon them.

The orientation of this manual has been to continue that approach throughout – to translate values and theory into practical application in the field.



If one of your values involves professional development, then you will likely continue to reflect on what you are doing in your classes and look for further stimulation to expand your understandings about fitness leadership.

To Think About

1. What parts of this manual are you fully committed to as a leader?

_____

_____

_____

2. What parts of this manual need some work on your part before the concepts are fully operative in your classes?

_____

_____

_____

3. What do you want to learn more about in fitness?

_____

_____

_____

4. What steps are you going to take to ensure that you follow up on the questions, interests, concerns, dreams that have emerged as a result of reading this manual?

_____

_____

_____

References for Unit Six:

[36] McCaw, Steve. "Fitness Appraisal" in **Fitness Leader**. Vol. 3, #7, March 1985. Pitters Publishing, Ottawa, Canada. Adapted. For more information on appraisals, write to: Group Fitness Office, 1220 Sheppard Ave. E., Toronto, Ontario, M2K 2X1.

[37] Strachan, Dorothy and Judy Kent. **Long and Short Term Planning**. The Skills for Management Volunteers. Fitness Canada, 1985. Adapted from Unit III.

[38] This concept was originally called "Exercise Seriation" and was developed by the author in 1979. The change in name reflects a refinement of the original idea and the process of application.

[39] By Emily Coleman and Betty Edwards in **Body Liberation**, J.P. Tarcher Inc. Los Angeles. Adapted.

Appendices

1. Word Bank

Word	Definition
Abductors	• muscles which move a limb (or other part) away from the midline of the body.
Abrasion	• often called a scrape. • a condition where the skin is worn away and numerous blood capillaries are exposed.
Adductors	• muscles which move a limb (or other part) towards the midline of the body.
Aerobic energy system	• in the aerobic production of energy, oxygen is used or combusted along with fats and carbohydrates to produce energy. The waste products are water, carbon dioxide and heat. The term aerobic means with oxygen.
Agility	• the rapidity, care and accuracy with which an individual can move in response to stimuli.
Alarm reaction	• the body's response to a stressor. May include increased heart rate, sweating, dry mouth, hormones flowing inside the body.
Alignment	• the proper positioning of parts of the body in relation to one another.
Alveoli	• millions of little balloon-like air sacs in the lungs surrounded by tiny blood vessels. The thin walls of the alveoli allow easy passage of oxygen into the blood and carbon dioxide out of the blood.
Anaerobic energy system	• in the anaerobic production of energy, oxygen is not used. Fuels (carbohydrates) are only partially combusted or broken down and the end product is lactic acid. The term anaerobic means without oxygen.
Anatomy	• the structural makeup of the human body.
Anemia	• the presence of a low hemoglobin level in the blood. • this condition reduces the amount of oxygen carried by the blood.
Arteries	• the conducting and distributing vessels for the blood. • arteries have thick and elastic walls that enable them to accommodate the volume of blood expelled from the heart.
Atherosclerosis	• a disease of the large arteries in which plaque-like deposits containing large amounts of cholesterol build up on the inside walls of the arteries. When the arteries become extremely hard from these deposits and from calcium deposits then the disease is called arteriosclerosis or "hardening of the arteries".

ATP	• adenosine triphosphate; when this substance is broken down it supplies energy to the muscle cell so that the cell can function properly. Three systems participate in the production of ATP: 1. CP system. 2. Anaerobic system. 3. Aerobic system.
Atria	• upper chambers of the heart which contract to expel blood into the lower chambers or ventricles.
Balance	• the maintenance of equilibrium. There are two basic ways to balance: 1. static balance – no movement. 2. dynamic balance – with movement.
Behavior description	• means reporting what you see and hear without placing a judgment on the behavior.
Blood pressure	• pressure from the heart beating forces the blood through the circulatory system from an area of high pressure to one of low pressure. The highest pressure attained after the contraction of the heart is called the systolic pressure. The lowest pressure that occurs during relaxation of the heart is called the diastolic pressure. Blood pressures vary from one person to another and are strongly affected by physical and emotional factors.
Bronchi	• two branches of the trachea or windpipe.
Capillaries	• very small conducting and distributing vessels for blood. • provide large areas for blood flow. • have very thin walls and serve as exchange vessels.
Cardiac output	• is the total product of heart rate and stroke volume.
Cardiovascular respiratory endurance	• the ability to continue strenuous tasks that stress the circulatory and respiratory systems for long periods of time.
Cardiovascular system	• provides the flow of blood necessary to maintain the needs of the tissue of the body. • includes the heart and the circulatory system.
Catharsis	• when stress demands are reduced from a negative to a positive level. This is a process of tension reduction.
Cell	• basic living unit of the body. • the body contains about 75 trillion cells.

Cholesterol	• a fat-like substance which is present in the diet of all persons. Besides the cholesterol we take in from eating meat, eggs, and other saturated fats, we also form cholesterol in the liver. Adequate amounts of cholesterol are important to good health. However, when deposits of cholesterol build up on the inside walls of the large arteries, a person has the disease called "atherosclerosis".
Circulatory system	• this network is made up of about 60,000 miles of tubing which carries blood to every part of the body.
Climate	• in a learning situation it is what it feels like to be and to work in a particular place at a particular time.
Congruence	• messages are sent through transmitters. In human beings our transmitters are our eyes, mouths, vocal chords, faces and bodies. All these transmitters send information at the same time. When the messages that they send are the same, our communication is said to be congruent.
Contusion	• a bruise caused by a direct blow to the muscle; can lead to bleeding deep in the muscle fibres.
Coordination	• the ability to integrate movements involving different muscle groups into a single pattern.
Coronary arteries	• blood vessels which supply oxygen to the heart.
Coronary heart disease	• this refers to heart disease that involves the coronary circulation and the heart. The left coronary artery supplies mainly the left ventricle and the right coronary artery supplies mainly the right ventricle but usually part of the left ventricle as well. The most common cause of coronary heart disease is atherosclerosis where there is a buildup of plaque-like deposits on the inside of the artery walls. Blood flows through these arteries are therefore reduced, resulting in less O_2 being delivered to the heart muscle itself.
CP system	• CP (creatine phosphate) is contained in the muscle and is an energy store for muscle contraction. CP operates as an immediate source for making ATP and is most important during the first few seconds of muscle contraction.
Diaphragm	• the muscle which separates the chest from the abdomen; when it contracts it allows for increased lung expansion during inspiration.
Digestive system	• transfers food and water from the external environment to the internal where it distributes food and water to the cells of the body by the circulatory system.
Dislocation	• a dislocation occurs when a joint is forced to go beyond its normal limits and as a result, the bone is displaced and there is damage to soft tissue.

Explosive strength	• how quickly you apply your strength; it is the ability to release maximum force as quickly as possible.
Extensors	• muscles which straighten a limb at a joint.
Extrinsic benefits of fitness	• benefits that are outside of the actual doing of the activity e.g. improved personal health, lowered health costs, improved personal and social productivity.
Fast twitch fibre	• develops tension very rapidly, can produce large amounts of power but tires very rapidly. • has a high potential for anaerobic metabolism.
Fats and carbohydrates	• the basic fuels used to supply energy.
Feedback	• is a way of checking whether the sender's message is getting through to the receiver. Internal feedback is when you monitor your own performance and think about what you are doing as you do it. External feedback happens when one person is listening to the verbal response of another or observing the other person's non-verbal reactions to what has just happened between them.
Fight or flight	• a situation where a person is under great stress and therefore evokes an involuntary surge of adrenalin or other hormones by way of the involuntary nervous system. This automatic response raises blood pressure, heart rate, metabolism, breathing rate and brings about other related physical responses that enable the person to respond to the stressor. There is a feeling of not knowing which way to turn – to stand and fight or run away.
Flexibility	• the full range of movement at a joint.
Flexors	• muscles which bend a limb at a joint.
Fracture	• an interruption in the continuity of a bone. • fractures are classified as either: 1. simple – a break in a bone without the bone coming through the skin 2. compound – a break in which the bone has been extended through the outer skin layers.
Gastrointestinal	• mouth, esophagus, stomach, small and large intestines.
Heart	• a pumping organ, actually two separate pumps, one of which propels blood through the lungs and the other through the rest of the body.
Hemoglobin	• a pigment contained in the red blood cells of the blood which has the ability to latch onto oxygen and hold it until delivery to the cells.

Holism	• an approach to health which looks at the total person – body, mind and spirit – who is constantly changing as the environment provides new knowledge and experience.
Hypokinesis	• a disease where a person has insufficient physical activity to maintain health.
Intrinsic benefits of fitness	• benefits derived from doing the activity e.g. joy, stress reduction, personal awareness.
Involuntary nervous system	• serves the "inner" functions of the body such as the heart and digestive organs and has been called an involuntary system due to the unconscious manner in which housekeeping chores of the body are performed.
Isometric strength	• muscular tension which occurs without limb or body movement.
Isotonic strength	• muscular tension which results in muscle shortening and movement occurring.
Joint	• a joint is formed when two or more bones of the skeleton come together. The structure of a joint is closely related to its function.
Laceration	• a laceration occurs when a sharp object tears the tissues producing a jagged cut.
Lactic acid	• byproduct of anaerobic metabolism.
Learning style	• refers to how adults acquire information, skill and experience. This happens in different ways, depending on what they want to learn and how they want to learn it.
Ligaments	• the bones of joints are connected to bands of fibrous tissue called ligaments. These ligaments prevent movement in an undesired plane and also limit the range or extent of desired movements.
Lymph	• a transparent, slightly yellowish fluid that is carried in the lymphatic system. The main functions of this system are the filtration of foreign particles, the disposal of bacteria and the production of antibodies.
Maximal oxygen uptake	• the largest amount of oxygen that the body can utilize during heavy work.
Metabolism	• the cellular changes providing the energies for the life processes and the elimination of waste materials.

Minerals and vitamins	• necessary for the maintenance of body structures and for a variety of chemical reactions that occur in the body.
Morbidity statistics	• data concerning the types of sickness that result in hospitalization, absenteeism, etc.
Mortality statistics	• data concerning the causes of death before one's time.
Motoneurons	• located in the spinal cord. • conduct the impulses out to the skeletal muscles. • a single motoneuron may send connectors to as many as 2000 individual muscle fibres.
Motor nerves	• carry instruction from the brain to some target area.
Motor unit	• a collection of motoneuron and the muscle fibres which it controls.
Muscle	• a collection of long fibres which are made up of cells and grouped in bundles. • each bundle is separately wrapped in a sheath that serves to hold it together and protect it. • muscles join into tendons at each end and insert onto the bones of the skeleton. • muscles represent a wide range of shapes and sizes. • what muscles look like provides some insight into the functions that they perform. Muscles of the fingers are small and are capable of performing very delicate movements. Muscles of the arms and legs are much larger and more powerful and are used in walking, running, throwing, kicking, etc.
Muscular endurance	• the continuation or maintenance of localized muscular contractions until local muscular fatigue sets in.
Muscular strength	• the tension that a muscle can exert in a single contraction.
Needs assessment	• the process of gathering information about needs and interests.
Nervous system	• receives, coordinates and responds to the array of stimuli that assault the body. • composed of the brain, the spinal cord and a complex network of nerves.
Neuron	• the basic unit of the nervous system. • each neuron has a cell body and thin fibres extending from it. • the neurons transmit signals to and from the brain and spinal cord and to and from the muscles of the body.
Non-verbal communication	• everything that is not included in language; e.g. facial expressions, skin color, breathing and voice changes, anything that we can see, hear, smell or touch.

Optimal wellness	• an active, positive state of good health in which a person has a life-long commitment to an optimal state of being.
Organ	• a collection of many different cells held together by a supporting framework, eg. heart, liver.
Overload	• means having the body do more work than it normally does. A person can achieve overload by increasing the total amount of work (e.g. exercise longer) or the work rate (e.g. exercise harder, faster).
Paraphrasing	• is a form of feedback. It is stating in your own words what you have understood from another person's statement.
Pharynx	• throat.
Plasma	• the fluid portion of the blood. • a yellowish solution containing over 90 percent water and a host of other dissolved substances.
Progressive resistance training	• as improvement in performance occurs, the "load" is increased.
Protein	• the most important building material in the body. • the most abundant material next to water in the human body.
Repetition	• refers to the number of times an exercise is repeated. It is a general rule to begin with a small number of repetitions that can be handled comfortably and gradually work up to a larger number. For muscular endurance, do a high number of repetitions at a brisk speed against light resistance. For muscular strength, do a few repetitions at a slow pace using maximum resistance or weight.
Respiration	• inspiration and expiration of air. • breathing and gas exchange at all levels.
Self-actualization	• the process by which a person develops to his/her own unique potential.
Sensory nerves	• carry information to the spinal cord and brain.
Skeletal system	• a framework of bones, put together with hinges and joints. • gives the body its general shape; supports the body and protects the organs inside it.
Slow twitch fibre	• a slow contracting muscle fibre. • cannot produce a large amount of power but is quite resistant to fatigue. • has a high potential for aerobic metabolism.

Specificity	• means that when a person improves his/her physical fitness, the improvement is specific to the kind of training that is done. If the training is geared to cardiovascular conditioning, then the improvement is specific to that area and not to flexibility, for example. This principle is important to consider when you are designing a fitness class geared to the needs of your participants.
Sprain	• a sprain is a twisting of the joint (ankle, knee, shoulders) that results in stretching or totally tearing ligaments and connective tissue.
Static flexibility	• when the end point of flexion-extension and abduction-adduction is held for 3 or 4 counts.
Steady state	• a stable rate of respiration and systemic functioning attained some minutes into exercise.
Sternum	• breastbone.
Strain	• a stretch, tear or rip in the muscle itself. • sometimes called a muscle pull.
Stress	• the rate of wear and tear within the body. • the general or non-specific response or reaction of the human body to any demand made upon it.
Stressor	• a demand made upon a person e.g. a loud noise, a rushed schedule, an argument.
Stroke volume	• the output of blood per beat or contraction of the heart.
Synapse	• a "spark gap" across which signals are transmitted from one neuron to another.
System	• the collection of 2 or more organs which serves a definite function in the operation of the body, e.g. digestive system.
Systemic circulation	• circulation throughout the body with the exception of the lungs.
Thoracic cavity	• an airtight cavity in which the lungs are located.
Trachea	• windpipe.
Triglycerides	• fatty acids which are absorbed into the lymph as fat droplets and enter fat cells where they are stored.
Veins	• the collection system for carrying blood from the capillaries to the heart. • one-way valves prevent the back-flow of blood into the capillaries.

Venae cavae	• two large veins just above and below the heart; they are the final veins conducting blood back to the heart.
Ventricle	• lower chamber of heart which receives blood from the upper chamber or auricle and which contracts to expel equal amounts of blood into pulmonary circulation and into systemic circulation.
Verbal communication	• what we say through words.
Voluntary nervous system	• is responsible for the activation of the skeletal muscles and is under voluntary control.